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SECTION 20. Medicine.

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ANALGESIC EFFECT OF LIGNOCAIN MIXED WITH ADRENALIN; COMMERCIALLY PREPARED VS FRESHLY PREPARED

Abstract: Objective: To compare effect of analgesia of freashly prepared lignocain before operation as compared to commercially available.

Design and Duration: It is a cross sectional study. This study was started in January 2018 and completed in august 2018 comprising on total duration of 8 months.

Setting: Study was conducted in a tertiary care hospital.

Patients and methods: There were 60 cases included in this study. Two groups were formed each consisted on 30 cases. One group was given freshly prepared lignocaine just before the operation and in second group commercially available lignocaine mixed with adrenalin was used. Effect of analgesia in both groups was compared. A performa was designed containing all relevant necessary questions. Data of patients was documented in performas properly. Consent was taken from all patients and also from ethical committee of the study institution for conducting study. Data was analyzed using SPSS software version 2017. Results were expressed in the form of graphs and tables.

Results: In this study both male and female cases were included. There were 60% male cases and 40% female. Age range of these cases was 25-55 years with mean age of 40 ± 15 years. Mostly cases were below 40 years. Duration of procedure in each case was less than one hour. In which group freshly prepared lignocaine and adrenaline mixture was used 27(90%) cases showed good analgesic effect and 3(10%) cases showed poor quality analgesia. In other group where commercially prepared analgesia was used 20(66.7%) cases showed good analgesic effect and 10(33.3%) cases poor effect of analgesia.

Conclusion: Freshly prepared lignocaine and adrenalin mixture showed good analgesic effect than commercially prepared lignocaine.

Key words: Lignocaine, local analgesia, Adrenalin, good quality analgesia.

Language: English

Citation: Asifa, Khan, A., & Amin, J. (2018). Analgesic effect of lignocain mixed with adrenalin; commercially prepared vs freshly prepared. ISJ Theoretical & Applied Science, 11 (67), 301-303.

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Introduction

Local analgesia is widely used in many surgical procedures having short duration.[1] In general surgery many operations are done under local anesthesia and almost all dental procedures are done in local analgesia. Benefits of local analgesia include less pain, early recovery from anesthesia, no need of prolong NPO before and after operation, less respiratory or cardiovascular risks and no need of extra investigations. Such patients have reduced

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morbidity and mortality due to anesthesia. There is shorter hospital stay and can be discharges on the same day.[2] There are many local anesthetics such as lidocaine, bupivacaine etc but lignocaine is most commonly used due to its less side effects. In modern worls general anesthesia is not liked. Adrenalin enhances effect of lignocaine when mixed with it and prolongs its duration of action.[3] Benefits of local analgesia include less pain, early recovery from anesthesia, no need of prolong NPO before and after operation, less respiratory or cardiovascular risks and no need of extra investigations. Such patients have reduced morbidity and mortality due to anesthesia.[4] There is shorter hospital stay and can be discharges on the same day. There are many local anesthetics such as lidocaine, bupivacaine etc but lignocaine is most commonly used due to its less side effects. Commercially prepared mixture of lignocaine and adrenalin has poor analgesic effect due to low Ph of mixture as adrenalin is stable at low Ph.[5] While freshly prepared mixture has good analgesic effect due to its higher PH. In European countries local anesthesia is most commonly used. In dental procedures like tooth extraction local analgesia is best choice.

Patients and methods

This is a cross sectional study conducted in a tertiary care hospital. Duation of study was eight months and was corried out in a period of January o August. There were 60 cases included in this study. Two groups were formed each consisted on 30 cases. One group was given freshly prepared lignocaine just before the operation and in second group commercially available lignocaine mixed with adrenalin was used. Effect of analgesia in both groups was compared. All cases in this study underwent surgical procedures shorter than one hour duration. Both groups were consisted on equal number of 30 cases belonging to both male and female genders. A performa was designed containing all relevant necessary questions. Data of patients was documented in performas properly. Consent was taken from all patients and also from ethical committee of the study institution for conducting study. Data was analyzed using SPSS software version 2017. Results were expressed in the form of graphs and tables. Frequencies and percentage were calculated from obtained data. Commercially prepared mixture was containing 2% lignocaine 1.8 ml diluted with 10,000 units. Commercial prepared mixture has ph 4-5 while freshly prepared mixture has ph 6.7.

Results

In this study both male and female cases were included. There were 60% male cases and 40% female. Age range of these cases was 25-55 years with mean age of 40±15 years. Mostly cases were below 40 years. Duration of procedure in each case was less than one hour. In which group freshly prepared lignocaine and adrenaline mixture was used 27(90%) cases showed good analgesic effect and 3(10%) cases showed poor quality analgesia. In other group where commercially prepared analgesia was used 20(66.7%) cases showed good analgesic effect and 10(33.3%) cases poor effect of analgesia.

Table 1.

Age of patients (years)	Number of patients (n)	%
25-35	15	25
36-45	22	36.7
46-55	23	38.3
Total	**60**	**100**

Table 2.

Type of lignocain	Patients with good analgesic effect		Patients with poor analgesic effect	
	N	**%**	**N**	**%**
Freshly prepared mixture of lignocain with adrenalin	27	90	3	10
Commercially available mixture of lignocaine with adrenalin	20	66.7	10	33.3
Total	**47**	**78.3**	**13**	**21.7**

Discussion

Effect of local anesthesia is determined by few factors such as ph of solution and degree of ionization in local anesthesia. Lower ph reduces its effect and less analgesia.[6-8] Local analgesia is widely used in many surgical procedures having short duration. In general surgery many operations are done under local anesthesia and almost all dental procedures are done in local analgesia. Benefits of local analgesia include less pain, early recovery from anesthesia, no need of prolong NPO before and after operation, less respiratory or cardiovascular risks and no need of extra investigations. Such patients have reduced morbidity and mortality due to anesthesia.[9,10] There is shorter hospital stay and can be discharges on the same day. This is a cross sectional study conducted in a tertiary care hospital. Duation of study was eight months and was corried out in a period of January o August. There were 60 cases included in this study. Two groups were formed each consisted on 30 cases. One group was given freshly prepared lignocaine just before the operation and in second group commercially available lignocaine mixed with adrenalin was used. Effect of analgesia in both groups was compared.[11] All cases in this study underwent surgical procedures shorter than one hour duration. Both groups were consisted on equal number of 30 cases belonging to both male and female genders. There are many local anesthetics such as lidocaine, bupivacaine etc but lignocaine is most commonly used due to its less side effects.[12] In modern worls general anesthesia is not liked. Adrenalin enhances effect of lignocaine when mixed with it and prolongs its duration of action. Benefits of local analgesia include less pain, early recovery from anesthesia, no need of prolong NPO before and after operation, less respiratory or cardiovascular risks and no need of extra investigations.[13] Such patients have reduced morbidity and mortality due to anesthesia. There is shorter hospital stay and can be discharges on the same day.[14-15] There are many local anesthetics such as lidocaine, bupivacaine etc but lignocaine is most commonly used due to its less side effects.

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LOW ARTERIAL BLOOD PH AND INCREASED MORTALITY AMONG PATIENTS IN ICU

Abstract: Objective: This study was conducted to determine relation of low blood ph and increased mortality among patients admitted in ICU.

Design and Duration: This is an observational type of study started in January 2018 and completed in August 2018 comprising on seven months duration.

Setting: This study was conducted in a tertiary care hospital Jinnah Hospital Lahore.

Patients and Methods: All patients admitted in ICU care either surgery or medicine, were included in this study. All male and female cases were included. Consent was taken from the close relatives of the patients for including data of patient in this study. A written consent was taken from medical superintendant of the hospital for conducting study. Privacy of data was maintained.

Results: There were 50 cases included in this study. There were both male and female cases. There were 35(70%) male cases and 15(30%) female cases. Age range of patients was 15-60 years with mean age of 44±20 years. There were 7(14%) cases between 15-25 years age, 9(18%) cases were between 26-35 years, 8(16%) cases between 36-45 years, 12(24%) cases between 46-55 years and 14(28%) cases above 55 years of age. Out of 50 cases 31(62%) died and 29(38%). There were 25(50%) cases out of 31 cases in which blood ph was below 7 in their disease course at least one time.

Conclusion: Low blood Ph was is associated with poor prognosis of disease and increased mortality rate among patients admitted in intensive care unit.

Key words: Blood ph, ICU, disease prognosis, critical ill patients.

Language: English

Citation: Asifa, Khan, B., & Fatima, A. (2018). Low arterial blood ph and increased mortality among patients in ICU. ISJ Theoretical & Applied Science, 11 (67), 304-306.

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Introduction

Patients admitted in intensive care unit have variable blood ph due to underlying disease process. Blood ph is a very important factor in determining morbidity and mortality in patients.[1] It was seen in this study that most of the cases died in intensive care unit were having low blood ph during illness period. It was seen that most of the cases in this study were male.[2] Disease process determines ph of the blood in patients, severely ill. When patients have normal range of body ph their body functions work normally and when body ph is abnormal it disturbs

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body functions.[3-5] When derangement in blood ph is slight compensatory mechanisms normalize it but when it is severely deranged then proper treatment is required for it. It is very important to maintain blood ph of the patients within normal range. An inclusion and exclusion criteria were established for cases included in this study. It was seen that most of the cases in this study were male.[6] Disease process determines ph of the blood in patients, severely ill. When patients have normal range of body ph their body functions work normally and when body ph is abnormal it disturbs body functions.[7] When derangement in blood ph is slight compensatory mechanisms normalize it but when it is severely deranged then proper treatment is required for it.

Patients and Methods

This is a cross sectional study conducted in a tertiary care hospital of Pakistan. An inclusion and exclusion criteria was formulated according to which all those cases were included in this study which got admitted in intensive care unit during study period, patients admitted in medical and surgical ICU both and which cases among them gave consent. All patients admitted in ICU care either surgery or medicine, were included in this study. All male and female cases were included. Consent was taken from the close relatives of the patients for including data of patient in this study. A written consent was taken from medical superintendant of the hospital for conducting study. Privacy of data was maintained. All data related to this study about patients was documented properly and was analyzed using statistical software.

Results

There were 50 cases included in this study. There were both male and female cases. There were 35(70%) male cases and 15(30%) female cases. Age range of patients was 15-60 years with mean age of 44±20 years. There were 7(14%) cases between 15-25 years age, 9(18%) cases were between 26-35 years, 8(16%) cases between 36-45 years, 12(24%) cases between 46-55 years and 14(28%) cases above 55 years of age. Out of 50 cases 31(62%) died and 29(38%). There were 25(50%) cases out of 31 cases in which blood ph was below 7 in their disease course at least one time. In these cases 45% were diabetic and 55% were non-diabetic. While 30 were cases of poisoning either suicidal or homicidal.

Table 1.

Age of patients (years)	Number of patients (n)	%
15-25	7	14
26-35	9	18
36-45	8	16
46-55	12	24
Above 55	14	28
Total	**50**	
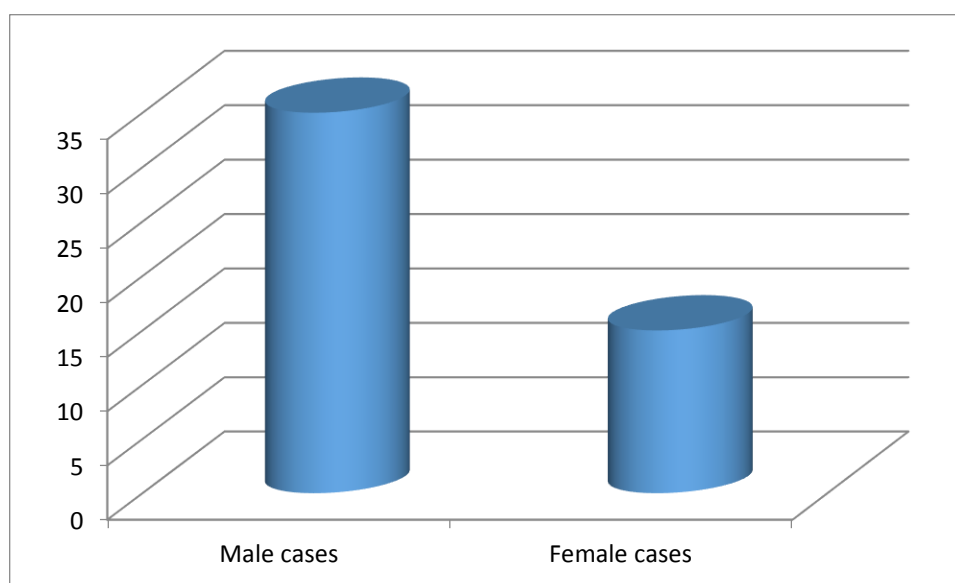
Picture 1.

Discussion

All cases in this study were admitted in intensive care unit either due to heart disease, poisoning or chronic liver disease or renal failure etc.[8] Patients admitted in intensive care unit have variable blood ph due to underlying disease process. Blood ph is a very important factor in determining morbidity and mortality in patients. It was seen in this study that most of the cases died in intensive care unit were having low blood ph during illness period.[9] It was seen that most of the cases in this study were male. Disease process determines ph of the blood in patients, severely ill. When patients have normal range of body ph their body functions work normally and when body ph is abnormal it disturbs body functions. When derangement in blood ph is slight compensatory mechanisms normalize it but when it is severely deranged then proper treatment is required for it.[10] It is very important to maintain blood ph of the patients within normal range. An inclusion and exclusion criteria were established for cases included in this study.[11-13] This is a cross sectional study conducted in a tertiary care hospital of Pakistan. An inclusion and exclusion criteria was formulated according to which all those cases were included in this study which got admitted in intensive care unit during study period, patients admitted in medical and surgical ICU both and which cases among them gave consent. Disease process determines ph of the blood in patients, severely ill.[14] When patients have normal range of body ph their body functions work normally and when body ph is abnormal it disturbs body functions. When derangement in blood ph is slight compensatory mechanisms normalize it but when it is severely deranged then proper treatment is required for it.[15] Early detection of abnormal blood ph and prompt treatment can reduce mortality rate to much extent.

Conclusion

Blood ph below normal range is indicator of poor prognosis of disease and increases mortality and morbidity in patients admitted in intensive care unit. Early detection of abnormal ph and proper treatment can reduce mortality.

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COMPLICATIONS OF INTRA UTERINE CONTRACEPTIVE DEVICE

Abstract: Objective: To determine complications of intra uterine contraceptive devices among females of childbearing age.

Design and Duration: This is an observational study of cross sectional type. It was started in December 2017 and completed in May 2018 comprising on total duration of 6 months.

Setting: This study was carried out in Gynaecology and obstetrics ward of Jinnah Hospital Lahore. This is a tertiary care hospital with 2000 beds. There is gynae ward with 150 beds and having all facilities.

Patients and methods: Female patients presented to gynae out-door of the study hospital during study period with complications of intra uterine contraceptive device were included in this study. Presenting complaint of these cases were abdominal pain, fever, missing thread of IUCD, misplaced IUCD signs of peritonitis after perforation of uterus secondary to misplaced device. Few patients presented with conception in spite use of IUCD. Data was compiled and analyzed in SPSS software. Consent was taken from patients and permission was also taken from medical superintendant of the hospital for conducting study.

Results: There were 50 cases reported in outdoor of gynae with complications of IUCD. Age of these cases was 15-40 years with mean age of 28.4 years. There were 25 cases between 15-25 years, 15 cases between 26-35 years, 10 cases above 35 years. Missing thread of IUCD was seen in 5(10%) cases, abdominal pain in 17(34%) cases, heavy irregular menstrual bleeding reported in 10(20%) cases, conception while using IUCD in 8(16%) cases and recurrent urinary tract infection reported in 10(20%) cases.

Conclusion: Intra uterine contraceptive devices are widely used among females in child bearing age. There are few serious complications of these devices one of them most common is misplaced IUCD.

Key words: IUCD, contraceptive methods, recurrent UTI, dilatation and curettage.

Language: English

Citation: Khan, B., Fatima, A., & Khalil T. A. (2018). Complications of intra uterine contraceptive device. ISJ Theoretical & Applied Science, 11 (67), 307-309.

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Introduction

Females in child bearing age often use contraceptive devices. This is used mostly among professional ladies during fertility age. There are many methods of contraception but IUCD is widely used these days. As this method is most common it also carries some serious complications such as misplaced device, abdominal pain, recurrent urinary tract infection. Female patients presented to gynae out-door of the study hospital during study period

with complications of intra uterine contraceptive device were included in this study. Presenting complaint of these cases were abdominal pain, fever, missing thread of IUCD, misplaced IUCD signs of peritonitis after perforation of uterus secondary to misplaced device. Intra uterine contraceptive devices are widely used among females in child bearing age. There are few serious complications of these devices one of them most common is misplaced IUCD. Management of females with misplaced intra uterine devices is dilatation and curettage in which device is removed in operation theater under spinal anesthesia. Long standing misplaced device may cause infection and perforation of uterus leading to peritonitis. In this case laprotomy is needed.

Patients and methods

This is an observational study conducted in a tertiary care hospital of Lahore. Study was completed in a duration of 6 months. Patients were included in the study according to inclusion criteria. Female patients presented to gynae out-door of the study hospital during study period with complications of intra uterine contraceptive device were included in this study. Presenting complaint of these cases were abdominal pain, fever, missing thread of IUCD, misplaced IUCD signs of peritonitis after perforation of uterus secondary to misplaced device. Few

patients presented with conception in spite use of IUCD. Data was compiled and analyzed in SPSS software. Consent was taken from patients and permission was also taken from medical superintendant of the hospital for conducting study.

Results

There were 50 cases reported in outdoor of gynae with complications of IUCD. Age of these cases was 15-40 years with mean age of 28.4 years. This is an observational study conducted in a tertiary care hospital of Lahore. Study was completed in duration of 6 months. Patients were included in the study according to inclusion criteria. Female patients presented to gynae out-door of the study hospital during study period with complications of intra uterine contraceptive device were included in this study. Presenting complaint of these cases were abdominal pain, fever, missing thread of IUCD, misplaced IUCD signs of peritonitis after perforation of uterus secondary to misplaced device. There were 25 cases between 15-25 years, 15 cases between 26-35 years, 10 cases above 35 years. Missing thread of IUCD was seen in 5(10%) cases, abdominal pain in 17(34%) cases, heavy irregular menstrual bleeding reported in 10(20%) cases, conception while using IUCD in 8(16%) cases and recurrent urinary tract infection reported in 10(20%) cases.

Table 1.

Age of females (years)	Number of cases	%
15-25	25	50%
26-35	15	30%
Above 35	10	20%

Table 2.

IUCD complications	Number of Cases	%
Missing thread of IUCD	5	10
Abdominal pain	17	34
Irregular heavy vaginal bleeding	10	20
Conception with IUCD	8	16
Urinary tract infection	10	20

Table 3.

Parity	Number of cases	%
Nulipara	7	14
1-2 children	15	30
3-4 children	28	56

Discussion

There are many ways of contraception but use of IUCD is more common and more successful as compared to other methods but it carry few complications which if neglected can be more serious

and life threatening in case of uterine rupture. Females in child bearing age often use contraceptive devices. This is used mostly among professional ladies during fertility age. There are many methods of contraception but IUCD is widely used these days.

As this method is most common it also carries some serious complications such as misplaced device, abdominal pain, recurrent urinary tract infection. Female patients presented to gynae out-door of the study hospital during study period with complications of intra uterine contraceptive device were included in this study. Presenting complaint of these cases were abdominal pain, fever, missing thread of IUCD, misplaced IUCD signs of peritonitis after perforation of uterus secondary to misplaced device. Intra uterine contraceptive devices are widely used among females in child bearing age. There are few serious complications of these devices one of them most common is misplaced IUCD. This is an observational study conducted in a tertiary care hospital of Lahore. Study was completed in a duration of 6 months. Patients were included in the study according to inclusion criteria. Female patients presented to gynae out-door of the study hospital during study period with complications of intra uterine contraceptive device were included in this study. Presenting complaint of these cases were abdominal pain, fever, missing thread of IUCD, misplaced IUCD signs of peritonitis after perforation of uterus secondary to misplaced device. There were 50 cases reported in outdoor of gynae with complications of IUCD. Age of these cases was 15-40 years with mean age of 28.4 years. This is an observational study conducted in a tertiary care hospital of Lahore. Study was completed in duration of 6 months. Patients were included in the study according to inclusion criteria

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SECTION 20. Medicine.

FREQUENCY OF VARIOUS DENTAL PROBLEMS AMONG CHILDREN BELOW 10 YEARS OF AGE

Abstract: Objective: To determine frequency of dental abnormalities among children.

Design and duration: This is a cross sectional study. It was started in January 2018 and completed in August 2018 comprising on total duration of 8 months.

Setting: Study was conducted at Multan Medical and Dental College, a city of Pakistan.

Patients and methods: All patients below 10 years of age presenting to study institution dental out-door during study period, were included in this study. A performa was designed containing all relevant questions about age, dental problem, duration etc. Consent was taken from all patients included in this study. Permission was taken from ethical committee of the institution for conducting study. Data was documented properly and analyzed using Microsoft office. Results were calculated in the form of percentage and frequency and expressed via tables and graphs.

Results: There were total 180 cases included in this study including 100(55.5%) female cases and 80(44.4%) male cases. Presenting complaints among these cases were tooth ache in 82 cases while 98 were nirmal, tooth mobility was present in 35 cases, tooth fracture was in 40 cases, gum bleeding was seen in 67 cases, food impaction on teeth was reported in 120 cases, bad breath was noted in 72 cases, bad dentation was present in 25, tooth were sensitive in 110 cases, noise in jaw joint was present ijn 15 cases, holes in tooth were noted in 30 cases and poor oral health was seen in 60, good health in 85 and very good oral hygiene was seen in 35 cases.

Conclusion: Poor oral hygiene is associated with dental problems in school going children. Dental problems can be avoided by maintaining good oral hygiene.

Key words: Dental problems, oral hygiene, gum bleeding, tooth ache in children.

Language: English

Citation: Younis, F., Basharat, A., & Naveed, M. (2018). Frequency of various dental problems among children below 10 years of age. *ISJ Theoretical & Applied Science, 11 (67),* 310-313.

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Introduction

In children dental problems are very common. Most common presenting complaint noted among these cases is bleeding gums and tooth ache. Children of young age are mostly unable to tell their parents about their dental pain and bleeding, so it remains obscure. Elder children can explain their complaint so it is easily comes in notice of parents and they consult to dentist. In our country there is deficiency of dental doctors so most of the people do not hav3 this facility and they try to deal with their dental problems by home-made remedies. There is need of dentists in every town, district and in all health centers either big or small. If dental problem is diagnosed in early stages then it can be cured quickly but late presentation makes cure delay. Tooth ache is a very common complaint and such experience is very painful often taking patients to the emergency ward for taking analgesic. Very high dose analgesic is required in this condition.

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Patients and methods

This is a cross sectional study conducted in a dental outdoor of Multan Medical and Dental College. All patients below 10 years of age presenting to study institution dental out-door during study period, were included in this study. A performa was designed containing all relevant questions about age, dental problem, duration etc. Consent was taken from all patients included in this study. Permission was taken from ethical committee of the institution for conducting study. Data was documented properly and analyzed using Microsoft office. Results were calculated in the form of percentage and frequency and expressed via tables and graphs. Patients were selected on the basis of inclusion criteria defined.

Results There were total 180 cases included in this study including 100(55.5%) female cases and 80(44.4%) male cases. Presenting complaints among these cases were tooth ache in 82(45.5%) cases while 98(54.4%) were normal, tooth mobility was present in 35(19.4%) cases, tooth fracture was in 40(22.2%) cases, gum bleeding was seen in 67(37.2%) cases, food impaction on teeth was reported in 120(66.7%) cases, bad breath was noted in 72(40%) cases, bad dentition was present in 25(14%), tooth were sensitive in 110(61%) cases, noise in jaw joint was present in 15(8.3%) cases, holes in tooth were noted in 30(16.7%) cases and poor oral health was seen in 60(33.3%), good health in 85(47.2%) and very good oral hygiene was seen in 35(19.5%) cases.

Table 1.

Dental problems	Number of Patients (N)	%
Tooth ache		
Yes	82	45.5
No	98	54.4
Mobility of tooth		
Yes	35	19.4
No	145	80.5
Gum bleeding		
Yes	67	37.2
No	113	62.8
Food impction		
Yes	120	66.7
No	60	33.3
Bad breath		
Yes	72	40
No	108	60
Bad dentition		
Yes	25	14
No	155	86
Sensitive tooth		
Yes	110	61
No	70	39
Noise in Jaw joint		
Yes	15	8.3
no	165	91.7
Holes in tooth		
Yes	30	16.7
No	150	83.3
Oral hygiene		
Poor	60	33.3
Good	85	47.2
Very good	35	19.5
Tooth fracture		
Yes	40	22.2
No	140	77.8
Total	**180**	

Patients and methods

There were total 180 cases included in this study including 100(55.5%) female cases and 80(44.4%) male cases. This is a cross sectional study conducted in a dental outdoor of Multan Medical and Dental College. All patients below 10 years of age presenting to study institution dental out-door during study period, were included in this study. A performa was designed containing all relevant questions about age, dental problem, duration etc. Consent was taken from all patients included in this study. Permission was taken from ethical committee of the institution for conducting study. Data was documented properly and analyzed using Microsoft office. Results were calculated in the form of percentage and frequency and expressed via tables and graphs. Patients were selected on the basis of inclusion criteria defined.

Discussion

Children of young age are mostly unable to tell their parents about their dental pain and bleeding, so it remains obscure. Elder children can explain their complaint so it is easily comes in notice of parents and they consult to dentist. In our country there is deficiency of dental doctors so most of the people do not hav3 this facility and they try to deal with their dental problems by home-made remedies. There is need of dentists in every town, district and in all health centers either big or small. If dental problem is diagnosed in early stages then it can be cured quickly but late presentation makes cure delay. Tooth ache is a very common complaint and such experience is very painful often taking patients to the emergency ward for taking analgesic. Very high dose analgesic is required in this condition. There were total 180 cases included in this study including 100(55.5%) female cases and 80(44.4%) male cases. This is a cross sectional study conducted in a dental outdoor of Multan Medical and Dental College. All patients below 10 years of age presenting to study institution dental out-door during study period, were included in this study. A performa was designed containing all relevant questions about age, dental problem, duration etc. Consent was taken from all patients included in this study. Permission was taken from ethical committee of the institution for conducting study.

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QR – Issue   **QR – Article**

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SECTION 20. Medicine.

FREQUENCY OF COMPLICATIONS RELATED TO LAPAROSCOPIC CHOLECYSTECTOMY

Abstract: Objective: To determine various complications during laparoscopic cholecystectomy.

Design and Duration: This is a cross sectional study started in February 2018 and completed after duration of 6 months in July.

Setting: This study was conducted in surgical unit of Lahore General Hospital.

Patients and Methods: Study was conducted on patients admitted in general surgical unit of study institution during study period due to gal, bladder stones, mass or calculus or acalculus cholecystitis and they were planned for cholecystectomy. All investigations of these cases were done from within the hospital laboratory. All data of patients was recorded on a predesigned performa. Data was analyzed and results were calculated using statistical software. Consent was taken from the patients and also from medical superintendant of the hospital.

Results: There were 200 cases included in this study with 120 female cases and 80 male cases. Out of 200 cases 16 were undergone for open cholecystectomy due to complications developed in laparoscopic cholecystectomy. Out of 16 cases 4(25%) cases got CBD injury, 5(31.2%) were having gall, bladder adhesions, stones were present in 2(12.5%) cases and in 2(12.5%) cases peritonitis developed peritonitis due to bile spillage. Out of 200 cases, bleeding from liver bed occurred in 25(12.5%) cases, CBD injury happened in 2(1%) cases, gut injury in 3(1.5%) cases, spillage of stones in 5(2.5%) cases, post operative collection of bile in 9(4.5%) cases and retained stone in CBD was seen in 4(2%) cases.

Conclusion: Laparoscopic cholecystectomy is an advanced procedure with many benefits but carrying few serious complications as well requiring expertise to reduce morbidity and mortality.

Key words: Laparoscopy, Cholecystectomy, CBD injury, Peritonitis, Gall stones
Language: English
Citation: Arshad, N., Ashraf, A., & Habib, M. (2018). Frequency of complications related to laparoscopic cholecystectomy. ISJ Theoretical & Applied Science, 11 (67), 314-316.
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Introduction

Cholelithiasis is a very common problem among the people of Pakistan. It is more common among females than male. It may be due to increased blood cholesterol and less physical activity in women of our country as they mostly remain at home most of the time. All data of patients was recorded on a predesigned performa. Data was analyzed and results were calculated using statistical software. Consent was taken from the patients and also from medical superintendant of the hospital. Patients were selected according to a pre set criteria. Male cases are less frequent. Gall stones lead to cholecystitis and inflammation, gangrene and perforation of gall

bladder. Abscess may be formed after perforation. Mass, stones and inflammation of gall bladder are indications of surgical removal of gall bladder either by open cholecystectomy or via laparoscopic cholecystectomy which is an advance modern procedure with few complications than open cholecystectmy. Expert doctors re required for laparoscopic procedure because it is a fine procedure and if not done properly may cause serious complications leading to laparotomy.

Patients and Methods

This is a cross sectional study conducted in a tertiary care hospital located in Lahore, a city of Pakistan. Study was completed in duration of 6 months Study was conducted on patients admitted in general surgical unit of study institution during study period due to gal, bladder stones, mass or calculus or acalculus cholecystitis and they were planned for cholecystectomy. All investigations of these cases were done from within the hospital laboratory. All data of patients was recorded on a predesigned performa. Data was analyzed and results were calculated using statistical software. Consent was taken from the patients and also from medical superintendant of the hospital. Patients were selected according to a pre set criteria. Out of 200 cases 16 were undergone for open cholecystectomy due to complications developed in laparoscopic cholecystectomy.

Results

There were 200 cases included in this study with 120 female cases and 80 male cases. Out of 200 cases 16 were undergone for open cholecystectomy due to complications developed in laparoscopic cholecystectomy. Out of 16 cases 4(25%) cases got CBD injury, 5(31.2%) were having gall, bladder adhesions, stones were present in 2(12.5%) cases and in 2(12.5%) cases peritonitis developed peritonitis due to bile spillage. Out of 200 cases, bleeding from liver bed occurred in 25(12.5%) cases, CBD injury happened in 2(1%) cases, gut injury in 3(1.5%) cases, spillage of stones in 5(2.5%) cases, post operative collection of bile in 9(4.5%) cases and retained stone in CBD was seen in 4(2%) cases.

Table 1.

Causes of conversion to open cholecystectomy	Number of patients (N)	%
CBD injury	4	25
Adhesions of gall bladder	5	31.2
Stones in CBD	2	12.5
Spillage of CBD stones	2	12.5
Gall bladder perforation	3	8
Total	**16**	**100**

Table 2.

Complications due to laparoscopic cholecystectomy	Number of patients (N)	%
Liver bed bleeding	25	12.5
CBD injury	2	1
Omental bleeding	6	3
Stones spillage	5	2.5
Biliary collection after operation	9	4.5
Cystic artery avulsion	5	2.5
Retained CBD stones	4	2
Gut injury	3	1.5

Discussion

It may be due to increased blood cholesterol and less physical activity in women of our country as they mostly remain at home most of the time. Male cases are less frequent. Gall stones lead to cholecystitis and inflammation, gangrene and perforation of gall bladder. Abscess may be formed after perforation. Mass, stones and inflammation of gall bladder are indications of surgical removal of gall bladder either by open cholecystectomy or via laparoscopic cholecystectomy which is an advance modern procedure with few complications than open

cholecystectmy. Expert doctors are required for laparoscopic procedure because it is a fine procedure and if not done properly may cause serious complications leading to laparotomy. This is a cross sectional study conducted in a tertiary care hospital located in Lahore, a city of Pakistan. Study was completed in duration of 6 months Study was conducted on patients admitted in general surgical unit of study institution during study period due to gal, bladder stones, mass or calculus or acalculus cholecystitis and they were planned for cholecystectomy. All investigations of these cases were done from within the hospital laboratory. All data of patients was recorded on a predesigned performa. Data was analyzed and results were calculated using statistical software. There were 200 cases included in this study with 120 female cases and 80 male cases. Out of 200 cases 16 were undergone for open cholecystectomy due to complications developed in laparoscopic cholecystectomy.

Conclusion

Cholecystectomy is a very common procedure practiced in general surgery wards. Laparoscopic cholecystectomy is an advanced procedure with many benefits but carrying few serious complications as well requiring expertise to reduce morbidity and mortality.

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SECTION 20. Medicine.

FREQUENCY OF HYPERTENSIVE DISORDERS AMONG PREGNANT LADIES

Abstract: *Objective: Purpose of this study was to observe hypertension among pregnant ladies.*

Design and Duration: This is across sectional study of observational type. Study was conducted in January 2018 and completed in October 2018, comprising on 10 months duration.

Setting: Study was conducted in gynecology and obstetrics ward of Indus hospital Lahore.

Patients and Methods: An inclusion and exclusion criteria was formed. Patients in this study were selected on the basis of inclusion criteria, according to which those patients were selected who developed hypertension after 20th week of gestation and those, who developed hypertension and fits within 10 days after delivery. According to exclusion criteria, patients having any other metabolic disease or developed hypertension and fits after 10 days of delivery were not included in this study. Proper written consent was taken from all cases included in this study and which cases did not give consent, were excluded from the study. Permission was taken from the ethical committee of study institution for conducting research work. Data was documented properly and analyzed on Microsoft office and SPSS softwares and presented in the form of percentages and frequencies expressed in tables and graphs.

Results: There were total 305 cases in this study having eclampsia and out of which 150 cases developed hypertensive disorders. There were 85(27.8%) cases between 20-25 years age, 97(31.8%) cases between 25-30 years, 73(24%) cases were having age between 31-35 years and 50(16.4%) cases were above 35 years of age. Out of 305 cases, 170(55.7%) patients developed eclempsia in antepartum period, 105(34.4%) in intrapartum period and 30(9.8%) in post partum period. Most common complication developed due to eclempsia was post partum hemorrhage.

Conclusion: Eclempsia is a very common problem among most of the pregnant ladies which causes various complications such as post partum hemorrhage, acute renal failure and acute respiratory distress syndrome.

Key words: Eclempsia, hypertensive disorders, pregnant ladies, Fits during pregnancy.

Language: English

Citation: Asad, R., Khalil, T. A., & Inayat, H. (2018). Frequency of hypertensive disorders among pregnant ladies. ISJ Theoretical & Applied Science, 11 (67), 317-320.

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Introduction

Eclempsia is a hypertensive disorder very common among pregnant ladies. It is associated with fits, renal failure, abruption placenta, cardio vascular disease, pulmory embolism, blindness and myocardial infarction etc. Hypertension most commonly occurs during antepartum period.

According to a report its prevalence is 5-8% among pregnant ladies in Pakistan. Hypertension due to pregnancy occurs after 20th week of gestation while chronic hypertension is already present. In pregnancy physiological changes occur. Blood pressure usually decreases in pregnancy but in eclempsia it is raised. Most of the times it is undiagnosed during pregnancy

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and it is diagnosed after delivery usually. Eclempsia occurs from 20th week of pregnancy till first week after delivery. Hypertension may cause maternal or fetal morbidity and mortality. It involves all body systems. There are many other factors as well which contribute to maternal and fetal morbidity and mortality such as illiteracy, low socioeconomic status, poor health facilities, lack of skills and multiparity. There is need of proper fetomaternal healthcare centers to diagnose pregnancy related complications in early stages so that proper treatment may be given. Such pregnancies are high risk and often cesarean section is needed as there is high chances of placenta previa, obstructed labour or breech delivery. These newborns are usually premature and may need neonatal ICU care and ventilator support.

Patients and Methods

An inclusion and exclusion criteria was formed. Patients in this study were selected on the basis of This is a cross sectional study of observational type which was conducted in a tertiary care hospital Indus hospital located in Lahore, a city in Pakistan. Study was completed in duration of 10 months. inclusion criteria, according to which those patients were selected who developed hypertension after 20th week of gestation and those, who developed hypertension and fits within 10 days after delivery. According to exclusion criteria, patients having any other metabolic disease or developed hypertension and fits after 10 days of delivery were not included in this study. Proper written consent was taken from all cases included in this study and which cases did not give consent, were excluded from the study. Permission was taken from the ethical committee of study institution for conducting research work. Data was documented properly and analyzed on Microsoft office and SPSS softwares and presented in the form of percentages and frequencies expressed in tables and graphs. During study period 910 cases were admitted in the ward out of which 305 developed eclempsia and all other were having normal blood pressure. All necessary investigations were done to rule out complications related to eclempsia.
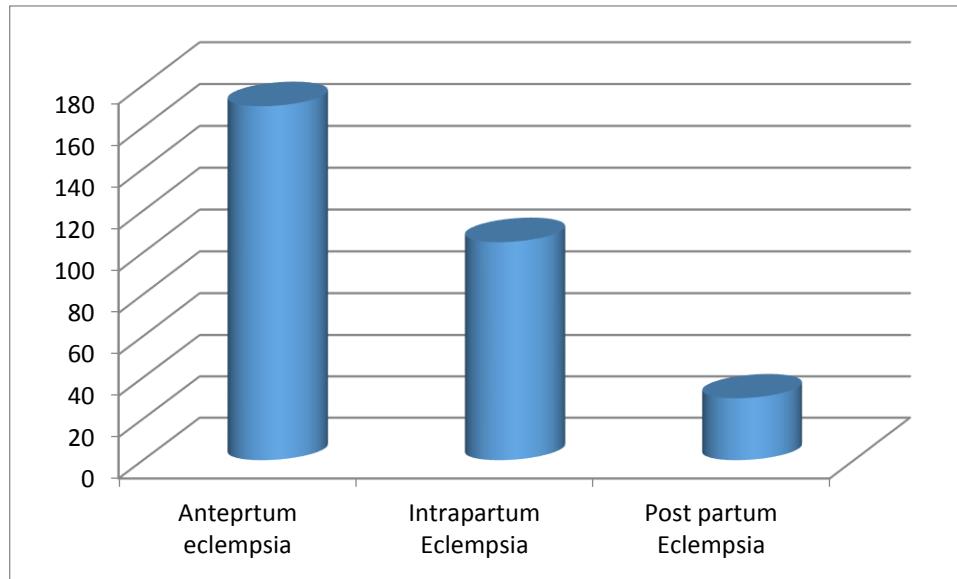
Results

Out of 910 cases admitted in Gynae ward of the study hospital 305 were included in this study. There were total 305 cases in this study having eclampsia and out of which 150 cases developed hypertensive disorders. There were 85(27.8%) cases between 20-25 years age, 97(31.8%) cases between 25-30 years, 73(24%) cases were having age between 31-35 years and 50(16.4%) cases were above 35 years of age. Out of 305 cases, 170(55.7%) patients developed eclempsia in antepartum period, 105(34.4%) in intrapartum period and 30(9.8%) in post partum period. Most common complication developed due to eclempsia was post partum hemorrhage. Disseminated intravascular coagulation was seen in 35(11.5%), PPH in 25(8.2%) cases, acute renal failure in 12(4%), cerebrovascular accidents in 7(2.3%), infection in 13(4.3%), pulmonary edema in 10(3.3%) and blindness in 5(1.6%) cases was reported.

Table 1.

Eclempsia related complications	Number of patients (N)	%
DIC	35	11.4
Post partum hemorrhage	25	8.2
Placenta abruptia	16	5.2
HEELP syndrome	14	4.6
Acute renal failure	12	4
Cerebro vascular accidents	7	2.3
ARDS	6	2
Infection	13	4.3
Pulmonary edema	10	3.3
Blindness	5	1.6
Myocardial ischemia	7	2.3
Total	**150**	**100**

Picture 1.

Discussion

Eclempsia Is a very common problem among pregnant ladies in Pakistan. It is less frequent in developed countries like America and UK. Developed countries have well developed health system and that is why such cases are diagnosed in early stages before development of complications in mothers or fetus. It is associated with fits, renal failure, abruption placenta, cardio vascular disease, pulmory embolism, blindness and myocardial infarction etc. Hypertension most commonly occurs during antepartum period. According to a report its prevalence is 5-8% among pregnant ladies in Pakistan. Hypertension due to pregnancy occurs after 20th week of gestation while chronic hypertension is already present. In pregnancy physiological changes occur. Blood pressure usually decreases in pregnancy but in eclempsia it is raised. Most of the times it is undiagnosed during pregnancy and it is diagnosed after delivery usually. Eclempsia occurs from 20th week of pregnancy till first week after delivery. Hypertension may cause maternal or fetal morbidity and mortality. It involves all body systems. Out of 910 cases admitted in Gynae ward of the study hospital 305 were included in this study. There were total 305 cases in this study having eclampsia and out of which 150 cases developed hypertensive disorders. There were 85(27.8%) cases between 20-25 years age, 97(31.8%) cases between 25-30 years, 73(24%) cases were having age between 31-35 years and 50(16.4%) cases were above 35 years of age. An inclusion and exclusion criteria was formed. Patients in this study were selected on the basis of This is a cross sectional study of observational type which was conducted in a tertiary care hospital Indus hospital located in Lahore, a city in Pakistan. Study was completed in duration of 10 months. Inclusion criteria, according to which those patients were selected who developed hypertension after 20th week of gestation and those, who developed hypertension and fits within 10 days after delivery. According to exclusion criteria, patients having any other metabolic disease or developed hypertension and fits after 10 days of delivery were not included in this study. Proper written consent was taken from all cases included in this study and which cases did not give consent, were excluded from the study. There is need of proper fetomaternal healthcare centers to diagnose pregnancy related complications in early stages so that proper treatment may be given. Such pregnancies are high risk and often cesarean section is needed as there is high chances of placenta previa, obstructed labour or breech delivery. These newborns are usually premature and may need neonatal ICU care and ventilator support. Public awareness and health education among preganct ladies can reduce prevalence of this disease and can reduce fetomaternal complications.

Conclusion

Eclempsia is a major risk factor of maternal and fetal mortality. If diagnosed in early pregnancy and proper treatment given, complications can be reduced. Delivery should be conducted in a hospital with having all necessary fascilties required such as neonatal ICU with ventilator support etc.Prevention of hypertensive disorders during pregnancy can reduce many complications and make pregnancy safe.

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QR – Issue   QR – Article

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SECTION 20. Medicine.

FREQUENCY OF VARIOUS COMPLICATIONS AFTER CAGE FIXATION IN T.B SPINE

Abstract: *Objective: To determine complications and frequency of failure of anterior cage fixation in TB spine.*

Design and duration: This is a prospective study. Study was stared in March 2018 and completed in September 2018 comprising on 7 months.

Setting: This study was conducted in neurosurgery ward of Jinnah Hospital Lahore.

Patients and methods: Patients with tuberculosis spine presented to neurosurgery out-door were admitted in the ward and they were planned for cage fixation. Investigations were done to confirm diagnosis and for anesthesia fitness prior to operation. All investigations were done from within the hospital. Mostly thoraco-lumbar spine was involved and both male and female cases were involved. It was seen that female cases were more than male cases having T.B spine. Family and personal history of tuberculosis was taken then proper physical examination was also done. Data was properly analyzed and results were calculated in the form of frequency and percentage and expressed in the form of tables and graphs.

Results: There were total 70 cases involved in this study with tuberculosis of spine. Age range was 15-60 years with mean age of 41.4 years. There were 20(28.6%) cases between 15-25 years, 25(35.7%) between 26-35 years, 11(15.7%) between 36-45 years, 8(11.4%) between 46-55 years and 6(8.6%) cases were having age above 55 years. There were 30(42.8%) male cases and 40(57.2%) cases were female. Due to cage fixation following complications were seen in 16(22.8%) cases out of 70 cases. Wound infection seen in 7(10%) cases, dural tear in 1(1.4%) cases, dyspnea in 3(4.3%), neurological deficiency seen in 3(4.3%) cases, complications of cage used in one case and graft complications seen in one case.

Conclusion: Tuberculosis of spine is much common in young age and females are more involved. Mostly thoracolumbar vertebrae are involved. Cage fixation is asurgical procedure of choice with few complications associated with it.

Key words: Tuberculosis, spine fracture, Cage fixation, neurodeficite.

Language: English

Citation: Inayat, H., & Bano, K. (2018). Frequency of various complications after cage fixation in t.b spine. ISJ Theoretical & Applied Science, 11 (67), 321-323.

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Introduction

Tuberculosis is most prevalent disease in Pakistan. All over the world this disease is found mostly in underdeveloped and developing countries. People wih poor socioeconomic status are more prone to this disease. Tuberculosis of spine is much common in young age and females are more involved. Mostly thoracolumbar vertebrae are involved. Cage fixation is asurgical procedure of choice with few complications associated with it.

Patients with tuberculosis spine presented to neurosurgery out-door were admitted in the ward and they were planned for cage fixation. Investigations were done to confirm diagnosis and for anesthesia fitness prior to operation. All investigations were done from within the hospital. Mostly thoraco-lumbar spine was involved and both male and female cases were involved. It was seen that female cases were more than male cases having T.B spine. Family and personal history of tuberculosis was taken then
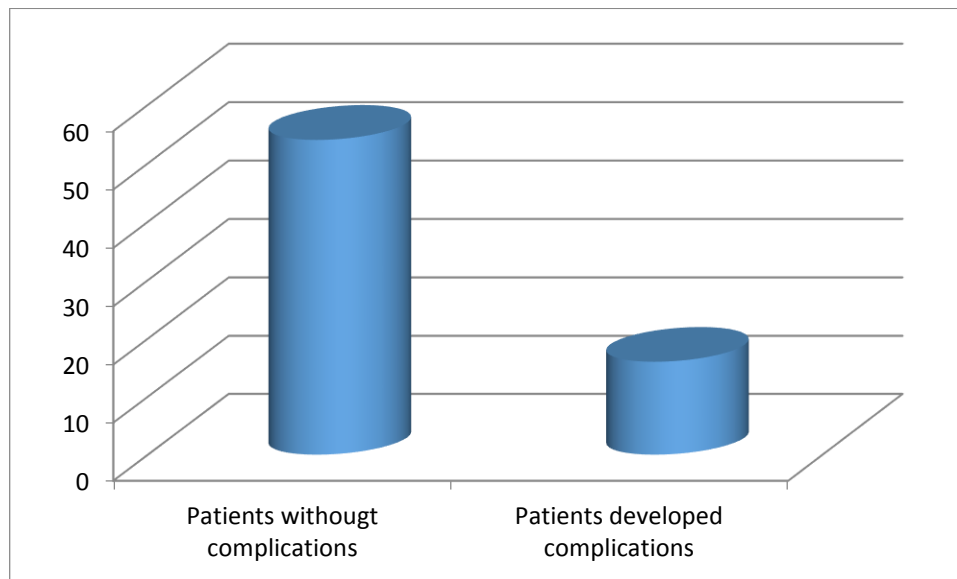
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proper physical examination was also done. Surgical management is definite treatment if properly done by expert neurosurgeons.

Patients and methods

This is a prospective study conducted in Jinnah hospital Lahore neurosurgery ward. Study was completed in duration of 7 months. A performa was designed containing all relevant questions about the study and questions were asked from the patients and their answers were noted down. Patients with tuberculosis spine presented to neurosurgery out-door were admitted in the ward and they were planned for cage fixation. Investigations were done to confirm diagnosis and for anesthesia fitness prior to operation. All investigations were done from within the hospital. Mostly thoraco-lumbar spine was involved and both male and female cases were involved. It was seen that female cases were more than male cases having T.B spine. Family and personal history of tuberculosis was taken then proper physical examination was also done. Data was properly analyzed and results were calculated in the form of frequency and percentage and expressed in the form of tables and graphs.

Results:

Patients with tuberculosis spine presented to neurosurgery out-door were admitted in the ward and they were planned for cage fixation. Investigations were done to confirm diagnosis and for anesthesia fitness prior to operation. All investigations were done from within the hospital. Mostly thoraco-lumbar spine was involved and both male and female cases were involved. There were total 70 cases involved in this study with tuberculosis of spine. Age range was 15-60 years with mean age of 41.4 years. There were 20(28.6%) cases between 15-25 years, 25(35.7%) between 26-35 years, 11(15.7%) between 36-45 years, 8(11.4%) between 46-55 years and 6(8.6%) cases were having age above 55 years. There were 30(42.8%) male cases and 40(57.2%) cases were female. Due to cage fixation following complications were seen in 16(22.8%) cases out of 70 cases. Wound infection seen in 7(10%) cases, dural tear in 1(1.4%) cases, dyspnea in 3(4.3%), neurological deficiency seen in 3(4.3%) cases, complications of cage used in one case and graft complications seen in one case.

Picture 1.

Discussion

Tuberculosis is a disease of very old times prevalent all over the world. It has high prevalence in Pakistan. Tuberculosis is most prevalent disease in Pakistan. All over the world this disease is found mostly in underdeveloped and developing countries. People wih poor socioeconomic status are more prone to this disease. This is a prospective study conducted in Jinnah hospital Lahore neurosurgery ward. Study was completed in duration of 7 months. A performa was designed containing all relevant questions about the study and questions were asked

from the patients and their answers were noted down. Patients with tuberculosis spine presented to neurosurgery out-door were admitted in the ward and they were planned for cage fixation. Investigations were done to confirm diagnosis and for anesthesia fitness prior to operation.Tuberculosis of spine is much common in young age and females are more involved. Mostly thoracolumbar vertebrae are involved. Cage fixation is asurgical procedure of choice with few complications associated with it. Patients with tuberculosis spine presented to neurosurgery out-door were admitted in the ward and

they were planned for cage fixation. Investigations were done to confirm diagnosis and for anesthesia fitness prior to operation. All investigations were done from within the hospital. Mostly thoraco-lumbar spine was involved and both male and female cases were involved. It was seen that female cases were more than male cases having T.B spine. . Due to cage fixation following complications were seen in 16(22.8%) cases out of 70 cases. Wound infection seen in 7(10%) cases, dural tear in 1(1.4%) cases, dyspnea in 3(4.3%), neurological deficiency seen in 3(4.3%) cases, complications of cage used in one case and graft complications seen in one case.

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SECTION 20. Medicine.

QR – Issue   QR – Article

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FREQUENCY OF WOUND INFECTION AFTER LAPAROTOMY IN DIFFERENT AGE GROUPS

Abstract: *Objective: To determine prevalence of infection of laparotomy wound in different age groups.*

Design and Duration: This is a cross sectional study started in January 2018 and completed in August 2018, comprising on a total duration of 8 months.

Setting: Study was conducted in general surgery unit of a tertiary care hospital Nishtar Hospital Multan.

Patients and Methods: Study was conducted on patients admitted in general surgery ward of study institution. These cases were having different diseases. Investigations were done and diagnosis was established, then laparotomy was planned in these cases. Anesthesia fitness was taken and patients were prepared for surgery properly one night before. After laparotomy wound was examined daily and dressing was changed. Patients were admitted after operation for 7-15 days and wound condition was monitored.

Results: There were total 150 cases included in this study. There were 100 male cases and 50 female cases. Age of these cases was 20-70 years. Minimum age reported was 22 years and maximum age was 68 years. Normal wound was seen in 70 male cases and 30 female cases. Minor wound infection was in 21 male cases and 9 female cases. Major infection was seen in wounds of 9 male and 9 female cases. It was seen that female cases had more frequency of wound infection than male cases.

Conclusion: In old age wound infection is more common than young age because of decreased immunity and poor prognosis of disease. Young patients showed good prognosis.

Key words: Wound infection, Laparotomy, surgical site infection.

Language: English

Citation: Habib, M., Ashraf, A., & Arshad, N. (2018). Frequency of wound infection after laparotomy in different age groups. ISJ Theoretical & Applied Science, 11 (67), 324-326.

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Introduction

With advancing age many physical changes occur in the body and all body systems become weak with aging. Immunity decreases in old age so wound infections are common. Such patients show poor prognosis due to increased complications. Laparotomy is done in many diseases. It can be done on emergency basis or elective basis. In our study patients from both male and female populations were included. These cases were of all age groups. It was seen that in adults wound infection was not so common as compared to old patients in which minor and even major infection was noted in laparotmy wound. Study was conducted on patients admitted in general surgery ward of study institution. These cases were having different diseases. There were total 150 cases included in this study. There were 100 male cases and 50 female cases. Age of these cases was 20-70 years. Minimum age reported was 22 years and maximum age was 68 years. Investigations were done and diagnosis was established, then laparotomy was planned in these cases. Anesthesia fitness was taken and patients were prepared for surgery properly one night before.

Patients and Methods

This is a cross sectional study conducted in Nishter Hospital Multan, a tertiary care hospital located in a city of Pakistan. Study was completed in duration of eight months. Study was conducted on patients admitted in general surgery ward of study institution. These cases were having different diseases. Investigations were done and diagnosis was established, then laparotomy was planned in these cases. Anesthesia fitness was taken and patients were prepared for surgery properly one night before. After laparotomy wound was examined daily and dressing was changed. Patients were admitted after operation for 7-15 days and wound condition was monitored. There were total 150 cases included in this study. There were 100 male cases and 50 female cases. Age of these cases was 20-70 years. Minimum age reported was 22 years and maximum age was 68 years.

Results

Study was conducted on patients admitted in general surgery ward of study institution. These cases were having different diseases. Investigations were done and diagnosis was established, then laparotomy was planned in these cases. Anesthesia fitness was taken and patients were prepared for surgery properly one night before. There were total 150 cases included in this study. There were 100 male cases and 50 female cases. Age of these cases was 20-70 years. Minimum age reported was 22 years and maximum age was 68 years. Normal wound was seen in 70 male cases and 30 female cases. Minor wound infection was in 21 male cases and 9 female cases. Major infection was seen in wounds of 9 male and 9 female cases. It was seen that female cases had more frequency of wound infection than male cases.

Table 1.

Age of patients (years)	Normal Wound		Minor infection		Major infection	
	Male(N=70)	Female(N=30)	Male(N=21)	Female(N=11)	Male (N=9)	Female(N=9)
20-30	15	6	2	1	1	0
31-40	22	9	5	3	2	3
41-50	10	5	8	1	1	1
51-60	12	7	4	2	2	2
Above 60	11	3	2	4	3	3
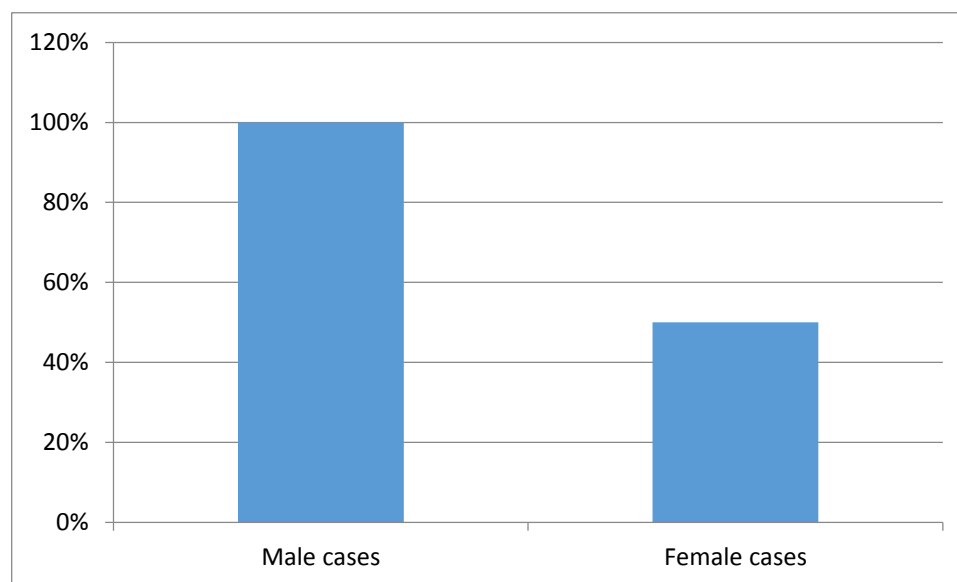
Picture 1.

Discussion

Laparotomy wounds are large and often get infectected. Body immunity plays main role in

healing of wounds. When healing power of the body is decreased, chances of wound infection increase. With advancing age many physical changes occur in

the body and all body systems become weak with aging. Immunity decreases in old age so wound infections are common. Such patients show poor prognosis due to increased complications. Laparotomy is done in many diseases. It can be done on emergency basis or elective basis. In our study patients from both male and female populations were included. These cases were of all age groups. It was seen that in adults wound infection was not so common as compared to old patients in which minor and even major infection was noted in laparotmy wound. Study was conducted on patients admitted in general surgery ward of study institution. These cases were having different diseases. There were total 150 cases included in this study. There were

100 male cases and 50 female cases. Age of these cases was 20-70 years. Minimum age reported was 22 years and maximum age was 68 years. Normal wound was seen in 70 male cases and 30 female cases. Minor wound infection was in 21 male cases and 9 female cases. Major infection was seen in wounds of 9 male and 9 female cases. It was seen that female cases had more frequency of wound infection than male cases. This is a cross sectional study conducted in Nishter Hospital Multan, a tertiary care hospital located in a city of Pakistan. Study was completed in duration of eight months. Study was conducted on patients admitted in general surgery ward of study institution.

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QR – Issue   **QR – Article**

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SECTION 20. Medicine.

NON SURGICAL MANAGEMENT OF CHRONIC ANAL FISSURE

Abstract: *Objective: To determine outcome of chronic anal fissure after non surgical management by chemical spincterotomy.*

Design and duration: This is a prospective study started in October 2017 and completed in May 2018.

Setting: Study was conducted in Mayo Hospital Lahore general surgical unit. This is a tertiary care hospital.

Patients and methods: Total 120 cases were included in this study having chronic anal fissure more than 6 months. These cases were admitted in general surgery ward for sphincterotomy by chemical method. Both male and female cases of different age groups were admitted in the ward. After getting al necessary investigations and taking anesthesia fitness operation was done on elective basis. Consent for operation was taken from the patient and they were told about benefits and complications of the procedure. Consent was also taken from the medical superintendant. Data was analyzed and expressed via tables and graphs. Frequencies and percentages were calculated.

Results: There were total 120 cases in this study including 76(63.3%) male and 44(36.7%) female cases. There were 35(29.2%) cases between 25-35 years age, 25(20.8%) cases were between 36-45 years, 40(33.3%) cases were between 46-55 years and 20(16.7%) cases were having age above 55 years. Procedure was successful in 98(81.7%) cases and unsuccessful in 22(18.3%) cases.

Conclusion: Chemical sphincterotomy is a procedure with minimum complications and good outcome with good prognosis. Expert doctor and patient preparation before surgery determine success of treatment.

Key words: Chronic anal fissure, shincterotomy, anal pain, Constipation.

Language: English

Citation: Zaffar, H., Inayat, H. R., & Tariq, M. (2018). Non surgical management of chronic anal fissure. ISJ Theoretical & Applied Science, 11 (67), 327-330.

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Introduction

Anal fissure is defined as a tear in anal mucosa leading to ulcer formation. This tear is usually in posterior mucosa. Patients with this disease present with anal pain during defecation, bleeding mixed with stool or at the end of defecation, a skin tag near the ulcer and constipation. On examination per rectal digital examination is very painful and proctoscopy is contraindicated in these cases as there is increased tone of sphincter due to ulcer formation. Total 120 cases were included in this study having chronic anal fissure more than 6 months. These cases were admitted in general surgery ward for sphincterotomy by chemical method. Both male and female cases of different age groups were admitted in the ward. After getting al necessary investigations and taking anesthesia fitness operation was done on elective basis. Consent for operation was taken from the patient and they were told about benefits and complications of the procedure. Chemical sphincterotomy is a procedure with minimum complications and good outcome with good prognosis. Expert doctor and patient preparation before surgery determine success of treatment.

Before surgical treatment conservative management is always advised.

Patients and methods

This is a cross sectional study conducted in a tertiary care hospital in the city of Lahore Pakistan. Study was carried out in general surgical ward of the study hospital. Total 120 cases were included in this study having chronic anal fissure more than 6 months. These cases were admitted in general surgery ward for sphincterotomy by chemical method. Both male and female cases of different age groups were admitted in the ward. After getting al necessary investigations and taking anesthesia fitness operation was done on elective basis. Consent for operation was taken from the patient and they were told about benefits and complications of the procedure. Consent was also taken from the medical superintendant. Data was analyzed and expressed via tables and graphs. Frequencies and percentages were calculated. Inclusion and exclusion criteria were established for the cases in this study and these criteria were applied on them.

Results

Total 120 cases were included in this study having chronic anal fissure more than 6 months. These cases were admitted in general surgery ward for sphincterotomy by chemical method. Both male and female cases of different age groups were admitted in the ward. After getting al necessary investigations and taking anesthesia fitness operation was done on elective basis. Consent for operation was taken from the patient and they were told about benefits and complications of the procedure.Out of 120 cases in this study including 76(63.3%) male and 44(36.7%) female cases. There were 35(29.2%) cases between 25-35 years age, 25(20.8%) cases were between 36-45 years, 40(33.3%) cases were between 46-55 years and 20(16.7%) cases were having age above 55 years. Procedure was successful in 98(81.7%) cases and unsuccessful in 22(18.3%) cases.
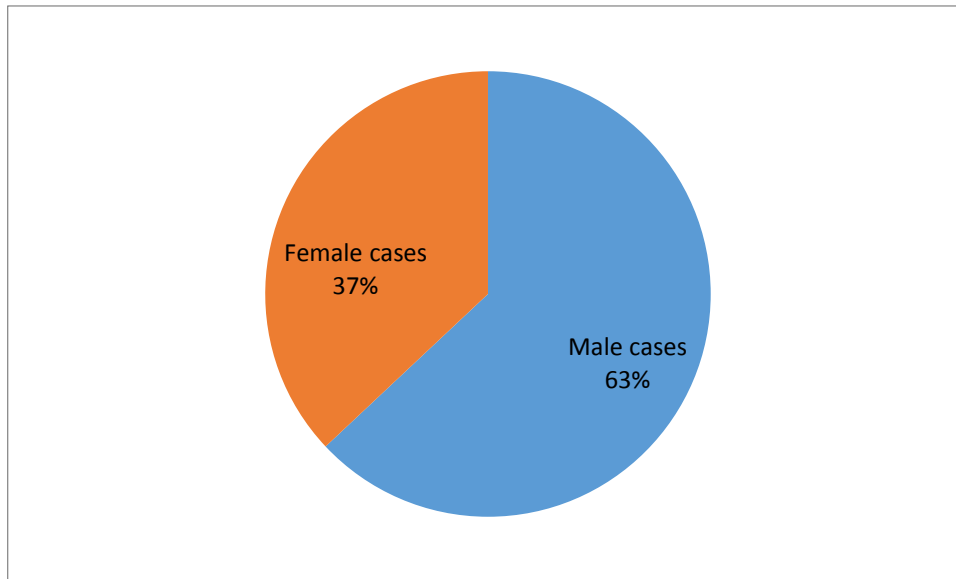
Table 1.

Age of patients (years)	Number of cases (N=120)	%
25-35	35	29.2
36-45	25	20.8
46-55	40	33.3
Above 55	20	16.7
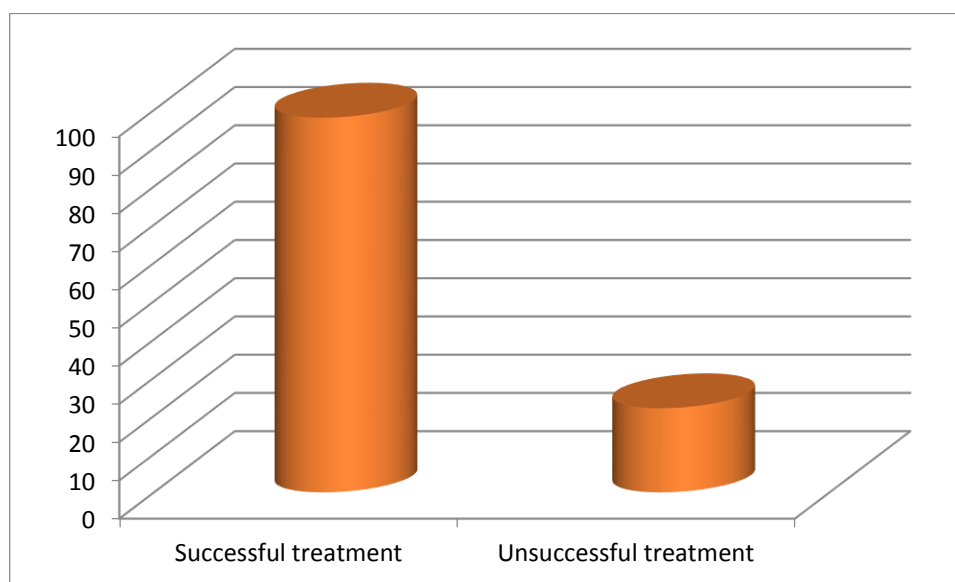
Picture 1.

Picture 2.

Discussion

Anal fissure is a very common problem among people of our country. Most of them present in late stage with advance symptoms. . Patients with this disease present with anal pain during defecation, bleeding mixed with stool or at the end of defecation, a skin tag near the ulcer and constipation. On examination per rectal digital examination is very painful and proctoscopy is contraindicated in these cases as there is increased tone of sphincter due to ulcer formation. Total 120 cases were included in this study having chronic anal fissure more than 6 months. These cases were admitted in general surgery ward for sphincterotomy by chemical method. Both male and female cases of different age groups were admitted in the ward. After getting al necessary investigations and taking anesthesia fitness operation was done on elective basis. Consent for operation was taken from the patient and they were told about benefits and complications of the procedure. Chemical sphincterotomy is a procedure with minimum complications and good outcome with good prognosis. This is a cross sectional study conducted in a tertiary care hospital in the city of Lahore Pakistan. Study was carried out in general surgical ward of the study hospital. Total 120 cases were included in this study having chronic anal fissure more than 6 months. These cases were admitted in general surgery ward for sphincterotomy by chemical method. Both male and female cases of different age groups were admitted in the ward. After getting al necessary investigations and taking anesthesia fitness operation was done on elective basis.

Conclusion

Anal fissure is a very common disease among male population as observed in this study. Chemical sphincterotomy is a procedure with minimum complications and good outcome with good prognosis. Expert doctor and patient preparation before surgery determine success of treatment.

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ORTHODONTIC PATIENTS MALOCCLUSION PREVALENCE IN PAKISTANI POPULATION

Abstract: *OBJECTIVE To evaluate the prevalence of malocclusion in patients reported in Orthodontic department Lahore medical and dental collage (LMDC).*
STUDY DESIGN cross sectional study.
PLACE OF STUDY Orthodontic department Lahore medical and dental collage Lahore.
DURATION Six month study span
MATERIAL AND METHODS Clinical examination of of 1055 patients by using Angle's classification (665 Girls and 390 Boys) RESULTS Class I malocclusion was found in 21.13% out of Total sample. Class II malocclusion found in 54.23% and class III malocclusion prevalence found in 9.1% of sample .Non of statistically significant differences found in distribution of malocclusion between males and females.
CONCLUSION Class II malocclusion was dominant in patients reported Orthodontic department of LMDC.
Key words: *orthodontics, Malocclusion, dental problem.*
Language: *English*
Citation: Basharat, A., Younis, F., & Naveed, M. (2018). Orthodontic patients malocclusion prevalence in Pakistani population. *ISJ Theoretical & Applied Science, 11 (67),* 331-333.
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Introduction

Prevalence of different types of malocclusion is important to plan orthodontic measures and evaluate the resources required for the services. Large scale epidemiological studies have been carried out to evaluate the prevalence of malocclusion in different ethnic and racial groups and reported incidences varied in different populations. These gross variations were recognized due to the differences in ethnic groups and also possible influences in registration methods of malocclusion trait and in sample compositions

The method of recording occlusal traits can be broadly divided into quantitative and qualitative measurements. Qualitative methods commonly include British standard institute (BSI) of incisor classification and Angle classification for molar relationship. These methods are useful in describing the occlusion traits mean of categorizing various types of dental malocclusions for quick and easy documentation as well as providing a common channel of communication among dental proffesionals

The aim of this study was to evaluate the prevalence of malocclusion in patients reported in orthodontic department of LMDC.

Materials and methods

This cross sectional study included orthodontic patients reported in department of orthodontic LMDC. Lahore from March 2017 to Aug. 2017.

A total 1055 patients consisting 665 girls and 390 boys with mean age of 16.4 ± 6.1 year were evaluated in this study. The present study was based on the examination of malocclusion on dental casts and clinical examination of patients.

The patients with the previous history of orthodontic treatment, permanent Tooth extractions other than 3rd molars, mixed dentition, congenital malformations like Cleft lip or/and palate and systemic diseases were excluded from the study . Consent were obtained from patients or from parents of patients.

Angle classification was used to determine anteroposterior dental arch relationship. The readings were taken either from the first permanent molar relationship or in the case of its absence or its extraction, the canine relationship was marked, asymmetry was designated by the subdivision- class I on one side and class II on the other side or class I on one side and class III on the other side . Patient with class II from one side and class III from the other side were excluded.

Results

Class I malocclusion was found in 255 patients which represents 24% of the total sample. Class II division 1 malocclusion was found in 533 (50.5%) and class II division 2 was found in 90 (8.5%) of sampleoverall class II was diagnosed in 623 patients that represented 59.1% of the total sample. Class III malocclusion consisted of 101 patients which represents 9.6% Table 1.

Table 1. Distribution of malocclusion types according to Angle's classification.

Malocclusion	Total	%age
Class I	255	24%
Class II Div. 1	533	50.5%
Class II Div. 2	90	8.5%
Class III	101	9.6%
Class II sub.	51	4.8%
Class III sub	25	2.4%
TOTAL	1055	99.8%

Class II subdivision was found 51(4.8%) and Class III subdivision 25(2.4%) respectively in patients.Class II had the highest frequency 59%. No significant difference was found in the distribution of malocclusion in males and females. Table II

Table – II. Distribution of malocclusion types on gender basis.

Malocclusion	Male	Female
Class I	105 (26.5%)	150 (22.7%)
Class II div. 1	183 (46.2%)	350 (53.1%)
Class II div. 2	31 (7.8%)	59 (8.9%)
Class III	44 (11.1%)	57 (8.6%)
Class II sub	22 (5.5%)	29 (4.4%)
Class III sub	11 (2.8)	14 (2.1%)
TOTAL	396	659

Discussion

Several studies have been published describing the prevalence of malocclusion and its different types. The results of this study may show variability due to differences in classification of occlusal relationship. The developmentsl period of study sample, Examine differences, and differences in sample size. The distribution of the malocclusion types may give valuable according to our results, Class II was the most common malocclusion which represented 72.7% of the sample. Whereas class II div. 1 was found in 46.2% and Class II div. 2 in 7.8% cases of the sample. The frequency of Class I was 26.5%. Class III malocclusion was 11.1%. Class II subdivision 5.5% and Class III subdivision was 2.8%

These results do not represents the prevalence of malocclusion in Pakistani population as a whole because this study was evaluated only subject seeking Orthodontic department .

Results of the study had observations that majority of sample population were females that is harmonized with other surveys. Generaly girls are very conscious for orthodontic procedures compared with boys. So this factor was vibrant in our smple population as well. However the ratio of

malocclusion both in males and females were almost same.

The local studies like Aslam et al". Reported that Angle's Class I is the most frequent pattern of malocclusion 55.2%. Another study in India on 3204 rural children were found to had malocclusion in 26.7%, among them Class I malocclusion was found to be 13.1%, Class II 11.6% and Class III 1.08% of the whole sample. In North American Caucasion Children, Massler Studied 2758 children and found class I to be 49.9%, Class II div-1 15.8% Class II div-2 was 1.98% and Class III was 7.5%.

In different studies like Ijaz et Al " that population was heterogeneous and data for studies collected from dental OPDs I contrast to Orthodontic patients in other studies.However, International literature reported Class II malocclusion as more frequent than Class I & III malocclusion in Asian men Population . However Jones investigated malocclusion and facial types in 132 Saudi Arabian patients being reffered for Orthodontic treatment and reported that 61.2% had Class I 30.4% had Class II div – 1, 3.9% had Class II div-2, and 13.1% had Class III malocclusion .

Very Rare studies have been conducted in Pakistan for the assessment of malocclusion .TRhe epidemiological differences and heterogenic characteristics of malocclusion in comparison of Pakistan And Other countries would be expected because of distinctive racial and ethnic composition .

These results cannot be a reflection of whole Pakistani population and thus expected to varying degree of prevalence of dental malocclusion. Other studies with larger sample size are needed for the knowing the true and accurate prevalence of malocclusion.

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QR – Issue   QR – Article

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OUTCOME OF OPEN VERSUS CLOSED HEMORRHOIDECTOMY

Abstract: Objective: This study was conducted to determine benefits of closed and open hemorrhoidectomy.

Design and Duration: Study comprises on the duration of 6 months from January 2018 to June 2018. This is a cross sectional study of prospective type.

Setting: Study was conducted in Nishter Hospital Multan, a city of Pakistan.

Patients and Methods: All patients admitted in general surgery ward of the study hospital with hemorrhoids and planned for surgery were included in this study. These cases were admitted in study duration of six months. Both male and female cases were included irrespective of their age. An inclusion and exclusion criteria was formed according to which patients were selected. Data was analyzed using SPSS software and presented via tables and graphs.

Results: There were 120 cases included in this study. Two groups of patients were formed containing equal number of cases 60 in each. Age range was 20-65 years with mean age of 35.5 years. Signs and symptoms were recorded on day one, after one week, one month and after 4 months. All data was recorded. On day one all 120 cases experienced anal pain, rectal bleeding was seen in 40 cases from group A and 55 cases from group-B, Post operative retention of urine was seen in 3 cases from group A and % cases from group-B. After 4 months duration in group-A, constipation was noted in 10 cases, anal pain in 2 cases, rectal bleeding in 3 cases and anal stenosis in 3 cases while in group-B anal pain was seen in one case, rectal bleeding in 2 cases, constipation in 4 cases and fecal incontinence in 2 cases was reported.

Conclusion: Closed method of hemorrhoidectomy is better than open method with early recovery, less pain and few complications. While in open method there is chance of anal stenosis and injury to anal sphincter.

Key words: open Hemorrhoidectome, closed hemorrhoidectomy, anal stenosis, anal pain.

Language: English

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Introduction

Hemorrhoids are very common among people having less physical activity or any underlying disease causing increased portal pressure. Initially these are managed by conservative method with laxatives. When they are enlarge, protruding outside anus with pain or bleeding then surgery is indicated to remove them. If not treated well they may lead to gangrene, infection, perforation and bleeding, stenosis of anus etc. Hemorrhoidectomy is a procedure of choice for removing them surgically. It

is done either by open technique or closed technique. In open technique there are more complications than closed method. All patients admitted in general surgery ward of the study hospital with hemorrhoids and planned for surgery were included in this study. These cases were admitted in study duration of six months. Both male and female cases were included irrespective of their age. An inclusion and exclusion criteria was formed according to which patients were selected. Early diagnosis of the disease with proper management can reduce complications. For cases in

study, all investigations were carried out from within the hospital laboratory. Charges for investigations and operation was not taken fom any patient.

Patients and Methods

This is a cross sectional study conducted in a tertiary care hospital general surgery ward. Study was completed in duration of six months. All patients admitted in general surgery ward of the study hospital with hemorrhoids and planned for surgery were included in this study. These cases were admitted in study duration of six months. Both male and female cases were included irrespective of their age. An inclusion and exclusion criteria was formed according to which patients were selected. Data was analyzed using SPSS software and presented via tables and graphs. Data collected from both groups was compared with each other and conclusion was made. Hemorrhoids are very common among people having less physical activity or any underlying disease causing increased portal pressure. Initially these are managed by conservative method with laxatives. When they are enlarge, protruding outside anus with pain or bleeding then surgery is indicated to remove them.
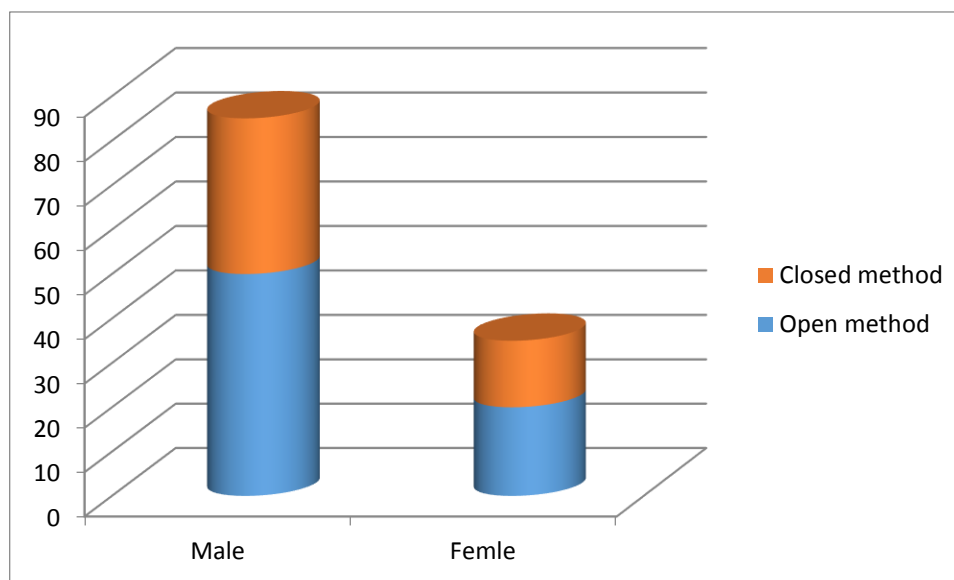
Results

This is a cross sectional study conducted in a tertiary care hospital general surgery ward. Study was completed in duration of six months. All patients admitted in general surgery ward of the study hospital with hemorrhoids and planned for surgery were included in this study. These cases were admitted in study duration of six months. There were 120 cases included in this study. Two groups of patients were formed containing equal number of cases 60 in each. Age range was 20-65 years with mean age of 35.5 years. Signs and symptoms were recorded on day one, after one week, one month and after 4 months. All data was recorded. On day one all 120 cases experienced anal pain, rectal bleeding was seen in 40 cases from group A and 55 cases from group-B, Post operative retention of urine was seen in 3 cases from group A and % cases from group-B. After 4 months duration in group-A, constipation was noted in 10 cases, anal pain in 2 cases, rectal bleeding in 3 cases and anal stenosis in 3 cases while in group-B anal pain was seen in one case, rectal bleeding in 2 cases, constipation in 4 cases and fecal incontinence in 2 cases was reported.

Table 1.

Complications	Day One		One Week later		One Month later		4 months later	
	Group-A	**Group-B**	**Group-A**	**Group-B**	**Group-A**	**Group-B**	**Group-A**	**Group-B**
Anal Pain	60	60	34	45	28	40	20	8
Per rectal bleeding	40	55	29	38	23	35	12	4
Urinary retention	3	5	15	22	13	12	7	2
Constipation	0	0	18	6	16	4	17	5
Fecal incontinence	1	0	2	1	4	1	3	1
Wound infection	-	-	11	8	17	5	22	6
Wound healing	-	-	40	57	39	55	45	58
Anal stenosis	-	-	1	-	3	1	4	1

Picture 1.

Discussion

Hemorrhoidectomy is a procedure of choice for removing them surgically. It is done either by open technique or closed technique. In open technique there are more complications than closed method. All patients admitted in general surgery ward of the study hospital with hemorrhoids and planned for surgery were included in this study. These cases were admitted in study duration of six months. Both male and female cases were included irrespective of their age. An inclusion and exclusion criteria was formed according to which patients were selected. Early diagnosis of the disease with proper management can reduce complications. For cases in study, all investigations were carried out from within the hospital laboratory. Charges for investigations and operation was not taken fom any patient. This is a cross sectional study conducted in a tertiary care hospital general surgery ward. Study was completed in duration of six months. All patients admitted in general surgery ward of the study hospital with hemorrhoids and planned for surgery were included in this study. These cases were admitted in study duration of six months. Both male and female cases were included irrespective of their age. An inclusion and exclusion criteria was formed according to which patients were selected. Data was analyzed using SPSS software and presented via tables and graphs. Data collected from both groups was compared with each other and conclusion was made. There were 120 cases included in this study. Two groups of patients were formed containing equal number of cases 60 in each. Age range was 20-65 years with mean age of 35.5 years. Signs and symptoms were recorded on day one, after one week, one month and after 4 months. All data was recorded. On day one all 120 cases experienced anal pain, rectal bleeding was seen in 40 cases from group A and 55 cases from group-B, Post operative retention of urine was seen in 3 cases from group A and % cases from group-B.

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PRESENTING SIGNS AND SYMPTOMS OF ORGANIC POISONING

Abstract: *Objective: This study was conducted to determine presenting signs and symptoms of patients after taking organic material like pesticides as suicidal or homicidal.*

Design: This is an observational study of cross sectional type.

Setting and duration: study was conducted in Nishtar Hospital Multan, a tertiary care hospital with 2000 beds. Study was started in February 2018 and completed in October 2018.

Patients and Methods: There were 60 cases reported in study hospital medical emergency with organic poisoning.They reached the hospital on the same day of poisoning. Their signs and symptoms were recorded and documented properly. These cases were admitted in the hospital and treatment was given on emergency basis in ICU care. These Cases had age range of 16-55 years with mean age of 37.5 years. An including criteria was established according to which patients were selected. Those not falling on criteria were excluded from the study.

Results: There were 60 cases reported with pesticide poisoning. Their minimum age was 16 years and maximum age recorded was 55 years. There were 20% cases between 15-25 years age, 34% between 26-35 years, and remaining cases were above 35 years of age. There were 20% cases who died inspite all measures taken and 80% survived.

Conclusion: Pesticide poisoning is a very lethal and commonly used mode of poisoning. Its outcome depends on quantity of poison taken, route of poisoning, time of presentation to hospital and condition of patient at the time of encounter to first health care facility. Such patients should be kept in ICU in continuous monitoring where ventilator should be present for the time of need.

Key words: *Pesticides, poisoning, organophosphorous, presentation, outcome.*

Language: *English*

Citation: Abdul Rasheed, K., Rashid, A., & Arshad Chohan, M. (2018). Presenting signs and symptoms of organic poisoning. *ISJ Theoretical & Applied Science, 11 (67),* 338-340.

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Introduction

There were 60 cases reported in study hospital medical emergency with organic poisoning.They reached the hospital on the same day of poisoning. Their signs and symptoms were recorded and documented properly. These cases were admitted in the hospital and treatment was given on emergency basis in ICU care. These Cases had age range of 16-55 years with mean age of 37.5 years. An including criteria was established according to which patients were selected. Those not falling on criteria were

excluded from the study. Initially intravenous fluids and atropine are given and gastric lavage is done. These patients require management on emergency bases providing ICU care and ventilator support. In such patients ski was decontaminated, gastric lavage done, activated charcoal administered via nasogastric tube according to 1g per kg body weight and atropine given intravenously according to 2mg every 30 mint then its infusion started until body secretions of the patient reduced and pupil mid dilated and heart rate becomes 100-130 per mint. Which patients went into

respiratory failure with respiratory rate greater than 35 per mint, loss of consciousness, oxygen saturation of blood less than 90% and hypotension with systolic blood pressure less than 80mmHg, they were immediately intubated and shifted on ventilator support.

Patients and Methods

This is a cross sectional study of observational type. Study was completed in duration of 9 months. Study was conducted in Nishtar hospital Multan. There were 60 cases reported in study hospital medical emergency with organic poisoning.They reached the hospital on the same day of poisoning. Their signs and symptoms were recorded and documented properly. These cases were admitted in the hospital and treatment was given on emergency basis in ICU care. These Cases had age range of 16-

55 years with mean age of 37.5 years. An including criteria was established according to which patients were selected. Those not falling on criteria were excluded from the study. Consent was taken from all patients on written performa. Permission was also taken from medical superintendant of the hospital.

Results

There were 60 cases reported with pesticide poisoning. Their minimum age was 16 years and maximum age recorded was 55 years. There were 20% cases between 15-25 years age, 34% between 26-35 years, and remaining cases were above 35 years of age. There were 20% cases who died inspite all measures taken and 80% survived. Presenting complaints include anxiety, convulsions and breathlessness.
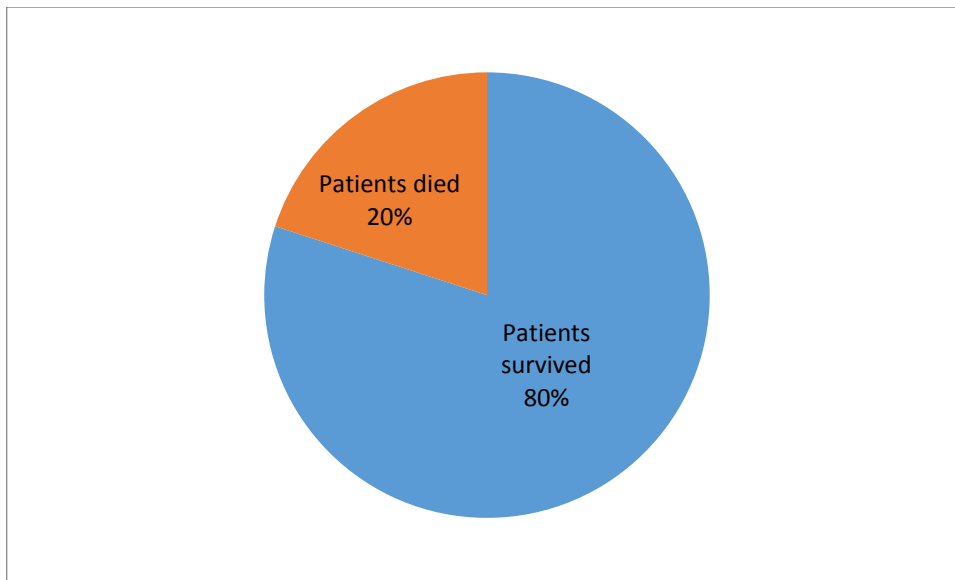
Picture 1.

Table 1.

Neurological Sign/ symptoms	Number of patients	Frequency (%)
Anxiety	30	50
Convulsions	6	10
Restlessness	11	18.3
Tremors	9	15
Coma	4	6.7
Total	60	100

Discussion

There were 60 cases reported in study hospital medical emergency with organic poisoning.They reached the hospital on the same day of poisoning. Their signs and symptoms were recorded and documented properly. These cases were admitted in

the hospital and treatment was given on emergency basis in ICU care. These Cases had age range of 16-55 years with mean age of 37.5 years. An including criteria was established according to which patients were selected. Those not falling on criteria were excluded from the study. Initially intravenous fluids

and atropine are given and gastric lavage is done. These patients require management on emergency bases providing ICU care and ventilator support. A study done by Synanyaka on 10 cases found respiratory failure type-2 in patients of such poisoning and 70% of them were shifted on ventilator. Initially such patients experience anxiety, confusion, weakness of proximal muscles and followed by cranial nerves palsy. In our study 27 cases developed anxiety, 3 developed convulsions, 19 restlessness and 11 patients developed tremors. In gastrointestinal system presentation of disease was in the form of nausea and vomiting and abdominal pain in most of the patients and less frequently diarrhea and increased salivation. There were 60 cases reported with pesticide poisoning. Their minimum age was 16 years and maximum age recorded was 55 years. There were 20% cases between 15-25 years age, 34% between 26-35 years, and remaining cases were above 35 years of age. There were 20% cases who died inspite all measures taken and 80% survived. Presenting complaints include anxiety, convulsions and breathlessness. This is a cross sectional study of observational type. Study was

completed in duration of 9 months. Study was conducted in Nishtar hospital Multan. There were 60 cases reported in study hospital medical emergency with organic poisoning.They reached the hospital on the same day of poisoning. Their signs and symptoms were recorded and documented properly. These cases were admitted in the hospital and treatment was given on emergency basis in ICU care. These Cases had age range of 16-55 years with mean age of 37.5 years.

Conclusion

Pesticide poisoning containing organophosphorous compound is very common in underdeveloped countries and its mortality and morbidity is very high. It requires management on emergency bases and aggressive treatment is needed. Ventillators should be present to treat such patients. Manifestation of disease may be via any body system but most dangerous is respiratory manifestation causing respiratory failure in the end. Early diagnosis and proper management can decrease such complications and life of the patient can be saved.

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SECTION 20. Medicine.

PRESENTATION OF PATIENTS WITH SURGICAL SITE INFECTION

Abstract: *Objective: To determine presenting signs and symptoms of patients with surgical site infection.*

Design and duration: This is a cross sectional study started in February 2018 and completed in August 2018 comprising on total duration of 7 months.

Setting: This study was conducted in general surgery ward of Bahawal Victoria Hospital Bahawalpur. This is a tertiary care hospital of 1500 beds.

Patients and methods: Patients presented to the study hospital after operation from the same hospital with surgical wound infection were included in this study. These cases were underwent various operations for different diseases. Examination of wound was done in out-door of surgery and patients with infected wounds were included in the study. Patients with major infection were admitted and other cases with minor infections were given antibiotics. A performa was designed containing all necessary questions related to age, gender, duration of operation as mentioned on discharge slip, type of operation, disease and duration after operation.

Results: Total 150 cases were included in the study which were operated for various diseases and presented in out-door after 2 weeks for follow up. Age range was 15-58 years with mean age of 44.6 years. There were 30(20%) between age 15-25 years, 41(27.3%) between 26-35 years, 35(23.3%) between 36-45 years and 44(29.3%) cases above 45 years of age. Out of 150 cases 17(11.3%) got surgical site infection. Duration of operation was less than 30 mints in one case, less than one hour in 4(23.5%) cases, 60-90 mints in 5(29.4%) cases, 2 hours duration in 3(17.6%) and more than 2 hours duration in 4(23.5%) cases. Leucocyte count was less than $8000/mm^3$ in 3(17.6%) cases, $8000-10000/mm^3$ in 2(11.8%) cases, $11000-14000/mm^3$ in 8(47%) cases and more than $14000/mm^3$ in 4(23.5%) cases.

Conclusion: Surgical site infection is common in old age patients. These cases have high leucocytecount and prolong duration of operation is also an important factor in determining surgical site infection.

Key words: Surgical site infection, post operative infection, prolong surgery.

Language: English

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Introduction

Infection of surgical wounds is a major complication leading to sepsis and failure of operation. It has many risk factors such as type of disease, type of procedure, duration of procedure, immunity status of the patient and post operative follow up etc. Patients presented to the study hospital after operation from the same hospital with surgical wound infection were included in this study. These cases were underwent various operations for different diseases. Examination of wound was done in out-door of surgery and patients with infected wounds were included in the study. Patients with major infection were admitted and other cases with
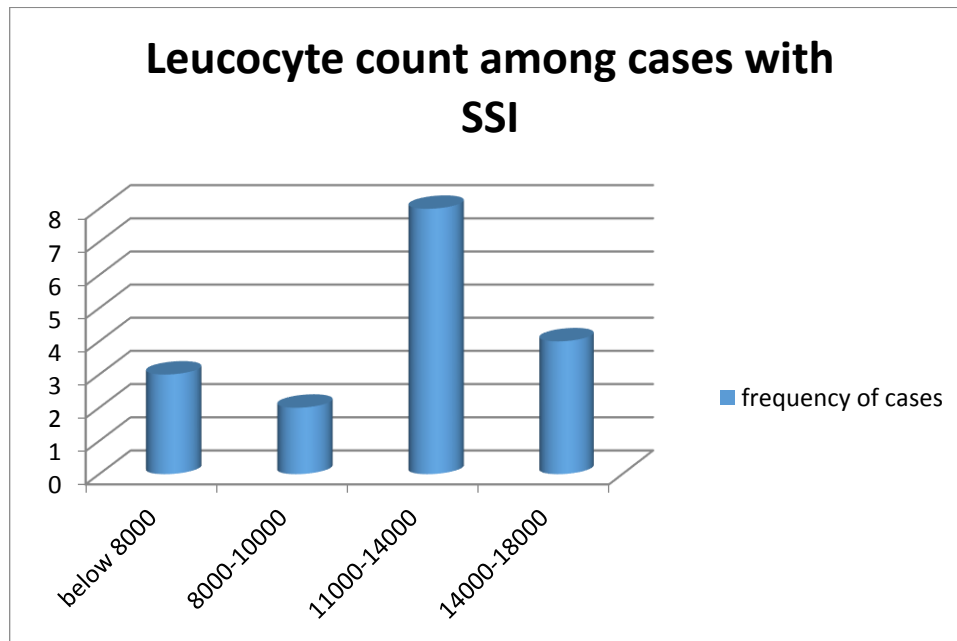
minor infections were given antibiotics. Operation theater conditions during operation play important role in determining wound infections and success of procedure.

Patients and methods

This study was conducted in Bahawal Victoria Hospital Located in Bahawalpur, a city of Pakistan. This is a tertiary care hospital with all necessary facilities. This study was completed in duration of 7 months. Inclusion and exclusion criteria were established and applied on the study sample. Patients presented to the study hospital after operation from the same hospital with surgical wound infection were included in this study. These cases were underwent various operations for different diseases. Examination of wound was done in out-door of surgery and patients with infected wounds were included in the study. Patients with major infection were admitted and other cases with minor infections were given antibiotics. A performa was designed containing all necessary questions related to age, gender,duration of operation as mentioned on discharge slip, type of operation, disease and duration after operation.

Results

This study was conducted in Bahawal Victoria Hospital Located in Bahawalpur, a city of Pakistan. This is a tertiary care hospital with all necessary facilities. This study was completed in duration of 7 months. Inclusion and exclusion criteria were established and applied on the study sample. Patients presented to the study hospital after operation from the same hospital with surgical wound infection were included in this study. Total 150 cases were included in the study which were operated for various diseases and presented in out-door after 2 weeks for follow up. Age range was 15-58 years with mean age of 44.6 years. There were 30(20%) between age 15-25 years, 41(27.3%) between 26-35 years, 35(23.3%) between 36-45 years and 44(29.3%) cases above 45 years of age. Out of 150 cases 17(11.3%) got surgical site infection. Duration of operation was less than 30 mints in one case, less than one hour in 4(23.5%) cases, 60-90 mints in 5(29.4%) cases, 2 hours duration in 3(17.6%) and more than 2 hours duration in 4(23.5%) cases. Leucocyte count was less than 8000/mm3 in 3(17.6%) cases, 8000-10000/mm3 in 2(11.8%) cases, 11000-14000/mm3 in 8(47%) cases and more than 14000/mm3 in 4(23.5%) cases.
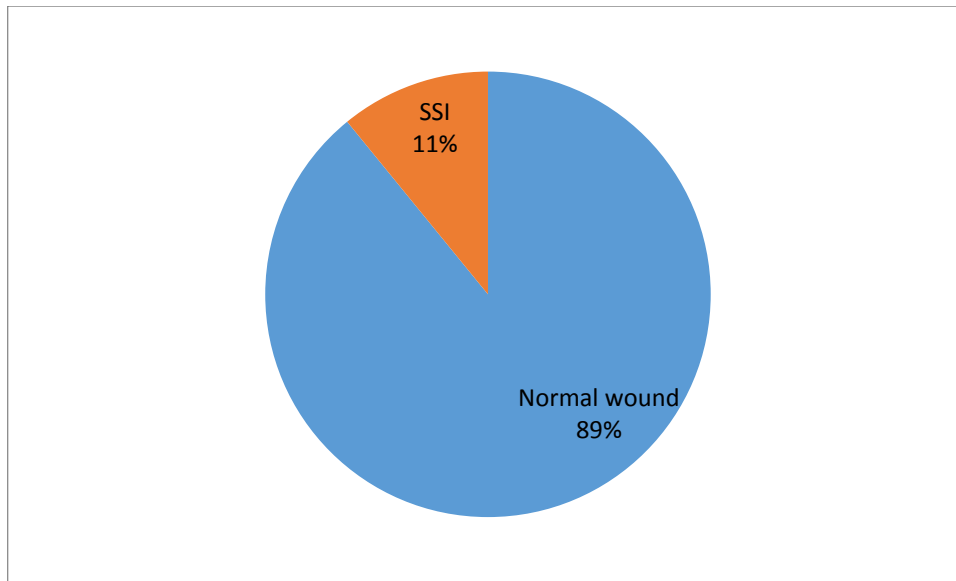

Picture 1.

Table 1.

Age of cases (years)	Number of cases (N)	%
15-25	30	20
26-35	41	27.3
36-45	35	23.3
Above 45	44	29.3

Picture 2.

Discussion

In our country medical facilities are limited in peripheral areas in which surgical procedures are done in compromised sterilization environment making surgical wounds infected. Infection of surgical wounds is a major complication leading to sepsis and failure of operation. It has many risk factors such as type of disease, type of procedure, duration of procedure, immunity status of the patient and post operative follow up etc. Patients presented to the study hospital after operation from the same hospital with surgical wound infection were included in this study. These cases were underwent various operations for different diseases. Examination of wound was done in out-door of surgery and patients with infected wounds were included in the study. Patients with major infection were admitted and other cases with minor infections were given antibiotics. Operation theater conditions during operation play important role in determining wound infections and success of procedure. This study was conducted in Bahawal Victoria Hospital Located in Bahawalpur, a city of Pakistan. This is a tertiary care hospital with all necessary facilities. This study was completed in duration of 7 months. Inclusion and exclusion criteria were established and applied on the study sample. Total 150 cases were included in the study which were operated for various diseases and presented in out-door after 2 weeks for follow up. Age range was 15-58 years with mean age of 44.6 years. There were 30(20%) between age 15-25 years, 41(27.3%) between 26-35 years, 35(23.3%) between 36-45 years and 44(29.3%) cases above 45 years of age. Out of 150 cases 17(11.3%) got surgical site infection. Patients presented to the study hospital after operation from the same hospital with surgical wound infection were included in this study. These cases were underwent various operations for different diseases. Examination of wound was done in out-door of surgery and patients with infected wounds were included in the study.

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SECTION 20. Medicine.

PREVALENCE OF TUBERCULOUS MENINGITIS AMONG MALE AND FEMALE CASES

Abstract: *Objective: To determine difference of prevalence of tuberculous meningitis among male and female gender*

Design and duration: This is a cross sectional study of observational type. Study was started in February 2018 and completed in October 2018 comprising on total duration of 9 months.

Setting: Study was conducted in Medical unit of Jinnah Hospital Lahore. This is a tertiary care hospital of Pakistan treating patients of large number daily basis.

Patients and Methods: All patients admitted with the signs and symptoms of meningitis were included in this study. These cases were admitted in the medical ward and investigations were done for evaluating the disease. CBC, serum profile and CT scan brain was done from within the hospital resources. Cases were belonging to both male and female gender irrespective of their age. A performa was designed in which all relevant questions were mentioned and answers of patients were documented in it properly. Cosent was taken from the patients for including them in the study. Permission was also taken from ethical committee of the study hospital. Privacy of data was maintained. All data was analyzed using statistical softwares and results were calculated in the form of percentages and frequency and presented via tables and graphs.

Results: There were 190 cases included in this study out of which only 60 cases were diagnosed with tuberculous meningitis with prevalence of 31.5%. Age range of patients was 15-60 years with mean age of 45.6 years. There were 28(14.7%) cases between 10-20 years age, 23.7% between 21-30 years, 35.8% between 31-40 years, 15.3% between 41-50 years and 10.5% between 51-60 years. There were 40 male cases and 20 female cases with meningitis out of 60 cases.

Conclusion: Tuberculous Meningitis is more common below 40 years age and male cases are more than female cases. Early diagnosis and treatment may decrease morbidity and mortality.

Key words: *Meningitis, tuberculosis, Headache, Fever.*
Language: *English*
Citation: Bano, K. (2018). PREVALENCE OF TUBERCULOUS MENINGITIS AMONG MALE AND FEMALE CASES. *ISJ Theoretical & Applied Science, 11 (67),* 345-347.
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Introduction

Meningitis is very common among Pakistani population and out of them mostly are of viral type. Bacterial cause is not much common but most common bacterial cause is tuberculous meningitis. These cases present with headache severe and usually not completely relieving with medication. Vomiting and fever are also major complaints. There were 190 cases included in this study out of which only 60 cases were diagnosed with tuberculous meningitis with prevalence of 31.5%. Age range of patients was 15-60 years with mean age of 45.6 years. All patients admitted with the signs and symptoms of meningitis were included in this study.

These cases were admitted in the medical ward and investigations were done for evaluating the disease. CBC, serum profile and CT scan brain was done from within the hospital resources. Cases were belonging to both male and female gender irrespective of their age.

Patients and Methods: This is a cross sectional study of observational type conducted in atertiary care hospital of Pakistan. Total duration of 9 months was spent in this study. All patients admitted with the signs and symptoms of meningitis were included in this study. These cases were admitted in the medical ward and investigations were done for

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evaluating the disease. CBC, serum profile and CT scan brain was done from within the hospital resources. Cases were belonging to both male and female gender irrespective of their age. A performa was designed in which all relevant questions were mentioned and answers of patients were documented in it properly. Cosent was taken from the patients for including them in the study. Permission was also taken from ethical committee of the study hospital. Privacy of data was maintained. All data was analyzed using statistical softwares and results were calculated in the form of percentages and frequency and presented via tables and graphs.

Results

All patients admitted with the signs and symptoms of meningitis were included in this study.

These cases were admitted in the medical ward and investigations were done for evaluating the disease. CBC, serum profile and CT scan brain was done from within the hospital resources. Cases were belonging to both male and female gender irrespective of their age. There were 190 cases included in this study out of which only 60 cases were diagnosed with tuberculous meningitis with prevalence of 31.5%. Age range of patients was 15-60 years with mean age of 45.6 years. There were 28(14.7%) cases between 10-20 years age, 23.7% between 21-30 years, 35.8% between 31-40 years, 15.3% between 41-50 years and 10.5% between 51-60 years. There were 40 male cases and 20 female cases with meningitis out of 60 cases.

Table 1.

Age of patients	Number of cases (N=190)		Number of cases with meningitis (n=60)			
			Male cases (n=40)		Female cases (n=20)	
	n	%	n	%	n	%
10-20	28	14.7	10	25	3	15
21-30	45	23.7	12	30	5	25
31-40	68	35.8	8	20	8	40
41-50	29	15.3	7	17.5	2	10
51-60	20	10.5	3	7.5	2	10

Discussion

Meningitis is common in young age and less frequent in old age. Mostly these cases belong to low socioeconomic status. This study was conducted to determine prevalence of disease among ,male and female cases. This is a cross sectional study of observational type conducted in atertiary care hospital of Pakistan. Total duration of 9 months was spent in this study. All patients admitted with the signs and symptoms of meningitis were included in this study. These cases were admitted in the medical ward and investigations were done for evaluating the disease. CBC, serum profile and CT scan brain was done from within the hospital resources. Cases were belonging to both male and female gender irrespective of their age. A performa was designed in which all relevant questions were mentioned and answers of patients were documented in it properly. Meningitis is very common among Pakistani

population and out of them mostly are of viral type. There were 190 cases included in this study out of which only 60 cases were diagnosed with tuberculous meningitis with prevalence of 31.5%. Age range of patients was 15-60 years with mean age of 45.6 years. There were 28(14.7%) cases between 10-20 years age, 23.7% between 21-30 years, 35.8% between 31-40 years, 15.3% between 41-50 years and 10.5% between 51-60 years. There were 40 male cases and 20 female cases with meningitis out of 60 cases. Bacterial cause is not much common but most common bacterial cause is tuberculous meningitis. These cases present with headache severe and usually not completely relieving with medication. Vomiting and fever are also major complaints. There were 190 cases included in this study out of which only 60 cases were diagnosed with tuberculous meningitis with prevalence of 31.5%.

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SECTION 11. Biology. Ecology. Veterinary.

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PROINFLAMMATORY CYTOKINES IN RHEUMATOID ARTHRITIS: RELATIONSHIP WITH VITAMIN D DEFICIENCY

Abstract: The article presents the results of the study the relationship between the level of inflammatory cytokines (TNF-α, IL-2, IL-6, IL-8) and vitamin D in patients with rheumatoid arthritis (RA). 74 patients with RA at the age from 27 to 71 years were examined. The control group consisted of 16 healthy individuals. The results of our research have shown high levels of proinflammatory cytokines in both seropositive and seronegative RF groups of patients with RA compared to control. High production of cytokines in both groups was combined with a low level of vitamin D. The significant negative correlation of vitamin D was detected with the level of the main proinflammatory cytokines, TNF-α and IL-6. Vitamin D deficiency may be one of the factors complicating the progress of rheumatoid arthritis, which confirms the use of this vitamin in the complex therapy of this disease.

Key words: rheumatoid arthritis, cytokines, interleukins, tumor necrosis factor, vitamin D.
Language: Russian

ПРОВОСПАЛИТЕЛЬНЫЕ ЦИТОКИНЫ ПРИ РЕВМАТОИДНОМ АРТРИТЕ: ВЗАИМОСВЯЗЬ С ДЕФИЦИТОМ ВИТАМИНА D

Аннотация: В статье представлены результаты исследования, проведенного с целью изучения взаимосвязи между уровнем некоторых про воспалительных цитокинов (ФНО-α, ИЛ-2, ИЛ-6, ИЛ-8) и содержанием витамина D у больных ревматоидным артритом (РА). В соответствии с поставленными задачами было обследовано 74 больных РА в возрасте от 27 до 71 лет. Контрольную группу составили 16 практически здоровых лиц. Результаты наших исследований показали высокие уровни провоспалительных цитокинов как в серопозитивной, так и в серонегативной по РФ группах больных РА по сравнению с контролем. Высокая продукция цитокинов в обеих группах сочеталась с низким содержанием витамина D. Выявлена достоверная отрицательная корреляция витамина D с уровнем основных провоспалительных цитокинов – ФНО-α и ИЛ-6. Полученные результаты демонстрируют, что дефицит витамина D может

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являться одним из факторов, осложняющих течение РА, и обосновывают необходимость применения препаратов этого витамина в комплексной терапии заболевания.

Ключевые слова: ревматоидный артрит, цитокины, интерлейкины, фактор некроза опухоли, витамин D.

Введение

Ревматоидный артрит (РА) – системное аутоиммунное ревматическое заболевание, характеризующееся хроническим воспалением синовиальной оболочки суставов и широким спектром внесуставных (системных) проявлений. Распространенность РА составляет 0,6-1,4% населения, при этом женщины страдают в 2,5 раза чаще, чем мужчины. Заболевание характеризуется упорным прогрессирующим течением, которое в отсутствие адекватного лечения приводит к нарушению функций опорно-двигательного аппарата и к инвалидизации больного. Так, в первые 3 года болезни трудоспособность теряют примерно 35% больных, а через 5 лет – более половины [4,7].

Выживаемость неадекватно леченных пациентов с РА сопоставима с таковой при сахарном диабете, инсульте, ИБС с трехсосудистым поражением коронарных артерий. Повышение смертности вызвано сопутствующими заболеваниями (поражение сердечно-сосудистой системы, почек, инфекционные осложнения, остеопоротические переломы и др.), которые развиваются вследствие иммунологических нарушений [7].

Как известно, в основе патогенеза РА лежит сложное сочетание генетически детерминированных и приобретенных дефектов регуляторных механизмов, ограничивающих патологическую активацию иммунной системы на различные стимулы. Основное значение в развитии заболевания имеет дефект В-клеточной толерантности, сопровождающийся продукцией аутоантител, и антигенспецифическая активация CD4$^+$ Т-лимфоцитов по Th1-типу с преобладанием синтеза провоспалительных цитокинов (ИЛ-1β, ИЛ-6, ИЛ-7, ИЛ-12, ИЛ15, ИЛ-17, ИЛ-18, ФНО-α, ИФН-γ) над противовоспалительными (ИЛ-4, ИЛ-5, ИЛ-10, ИЛ-13, ТФР-β) [1,5,12].

Причины "неправильной" активации иммунной системы на сегодняшний день точно не установлены, однако доказано значение некоторых факторов риска, влияющих на развитие РА. В последние годы значительное внимание уделяется определению роли витамина D в патогенезе РА. Ранее считалось, что основной функцией активной формы этого витамина (1,25(OH)$_2$D) является его влияние на кальций-фосфорный обмен, однако последние исследования доказали его плейотропное действие на многие физиологические процессы в организме [6].

Обнаружено, что 1α-гидроксилирование 25(OH)D происходит не только в почках, но и во многих других тканях. Внепочечно продуцированный 1,25(OH)$_2$D действует как аутокринный агент с клеточно-специфическими функциями, такими как ингибирование клеточной пролиферации, стимуляция клеточной дифференциации и регуляции иммунитета. Внепочечная 1α-гидроксилазная активность зависит от сывороточного уровня 25(OH)D и определяется локальными факторами (цитокинами и факторами роста) [6,11].

Целью настоящего исследования явилось изучение взаимосвязи между содержанием витамина D и уровнем некоторых провоспалительных цитокинов в сыворотке крови больных РА.

Материалы и методы.

В соответствии с поставленными задачами было обследовано 74 пациента РА (59 женщин, 15 мужчин) в возрасте от 27 до 71 лет, которые проходили обследование в Терапевтической Клинике и Лаборатории Клинической Биохимии Азербайджанского Медицинского Университета. Контрольную группу составили 16 практически здоровых лиц (13 женщин, 3 мужчин).

В сыворотке крови всех обследованных определяли уровень ревматоидного фактора (РФ) турбидиметрическим методом посредством коммерческого набора фирмы "Linear" (Испания).

Иммуноферментным методом анализа устанавливали сывороточную концентрацию интерлейкинов ИЛ-2, ИЛ-6, ИЛ-8 и фактора некроза опухоли-альфа (ФНО-α) с помощью наборов фитмы "Vektor-Best" (Российская Федерация). Уровень витамина D оценивали по содержанию 25(OH)D посредством набора реактивов фирмы "Bioactiva Diagnostica" (Германия). Отметим, что 25(OH)D обладает длительным периодом полураспада, поэтому является наилучшим серологическим маркером для оценки статуса витамина D в организме.

Полученные данные подвергались статистической обработке и были представлены в виде среднего значения и среднеквадратичного отклонения (M±SD). Для оценки связи между уровнем цитокинов и витамина D проводили корреляционный анализ с использованием рангового корреляционного теста Спирмена. При этом значения p<0,05 считались статистически значимыми.

Результаты и обсуждение.

В ходе исследований в зависимости от содержания РФ пациенты были подразделены на 2 группы: с серопозитивным и серонегативным РА. Положительные титры РФ были обнаружены в сыворотке крови 53 больных (71,6%) и средняя концентрация этого показателя у них составила 55,2±1,08 Ед/мл. У 21 пациента (28,4%) диагностировался серонегативный вариант РА, средняя концентрация РФ в этой группе составила 9,36±0,28 ЕД/мл.

Результаты исследования цитокинового профиля в контрольной группе и у больных РА представлены в таблице.

Таблица 1. Уровни провоспалительных цитокинов у больных РА.

Группы Показатели	Контроль n=16	Серонегативный РА n=21	Серопозитивный РА n=53
ФНО-α, пг/мл	0,75±0,28 (0,10-4,84)	1,62±0,32* (0,63-7,20)	1,89±0,20** (0,72-9,40)
ИЛ-2, пг/мл	0,58±0,35 (0-5,80)	1,46±0,25* (0,84-6,10)	1,97±0,18** (0,93-7,65)
ИЛ-6, пг/мл	2,73±0,19 (1,60-4,50)	3,6±0,27* (1,25-6,18)	4,83±0,34**,**,# (2,00-12,20)
ИЛ-8, пг/мл	2,48±0,15 (1,30-3,64)	3,88±0,24*** (2,62-7,24)	4,15±0,30*** (1,80-10,60)

Примечание: * -p<0,05, ** - p<0,01, *** - p<0.001 – по сравнению с контролем; # - p<0.01 – по сравнению со значениями серонегативных по РФ больных РФ.

Как видно из таблицы, в обеих группах больных РА отмечается статистически достоверное повышение уровня ФНО-α по сравнению с контролем: в 2,16 раз (p<0,05) в серонегативной и в 2,5 раз (p<0,01) в серопозитивной по РФ группе. При этом достоверных различий между группами больных РА в уровне этого показателя не обнаружено.

Исследование провоспалительных цитокинов ИЛ-2, ИЛ-6 и ИЛ-8 у больных с серонегативным вариантом РА выявило достоверное повышение их концентрации в сравнении с показателями здоровых лиц в 2,5 раз (p<0,05), на 32%(p<0,05) и на 57% (p<0,001) соответственно. Уровень этих цитокинов в серопозитивной группе более значимо превышал контрольные значения: ИЛ-2 в 3,4 раз (p<0,01), ИЛ-6 на 77% (p<0,001) и ИЛ-8 на 68% (p<0,001). Сравнительная оценка не выявила достоверных различий между группами больных РА в уровне ИЛ-2 и ИЛ-8, в то время, как концентрация ИЛ-6 при серопозитивном варианте РА на 34% (p<0,01) превышала значения этого показателя в серонегативной группе.

Как известно, дисбаланс цитокиновой системы является важным фактором иммунопатогенеза РА. Среди основных провоспалительных цитокинов, отвечающих за прогрессирование тканевого повреждения и развитие системных проявлений, выделяют ФНО-α. При РА ФНО-α продуцируется макрофагами синовиальной жидкости, и его биологическая активность опосредуется связыванием со специфическими рецепторами, экспрессированными на нейтрофилах, эндотелиоцитах, фибробластах, кератиноцитах и т.д. ФНО-α запускает механизм активации факторов транскрипции, которые, в свою очередь, индуцируют апоптоз и регулируют активность генов, кодирующих синтез провоспалительных цитокинов (ИЛ-1, ИЛ-6, ИЛ-8) и других медиаторов воспаления [8,12].

ИЛ-2 секретируется в основном Т(CD4+)-хелперами и является одним из важных цитокинов, участвующих в процессе развития иммунного ответа. Связывание этого цитокина со специфическими рецепторами вызывает пролиферацию В-лимфоцитов, активирует цитотоксические Т-лимфоциты, стимулирует естественные киллеры и генерацию лимфокин-активированных киллеров. Установлено, что ИЛ-2 стимулирует синтез и секрецию таких цитокинов, как ИЛ-4, ИЛ-6, ИФН-γ, ФНО-α [2,12].

ИЛ-6 является одним из основных провоспалительных цитокинов и индуктором системного воспаления. Он продуцируется лимфоцитами, моноцитами, нейтрофилами, В-клетками, фибробластами, тучными клетками, синовиальными фибробластами и макрофагами. Этот цитокин способен активировать продукцию острофазовых белков, антител В-клетками, хемокинов эндотелиальными клетками, экспрессию молекул адгезии, вызывать пролиферацию синовиальных фибробластов и активировать остеокласты [12,13].

ИЛ-8 является хемокином, ответственным за хемотаксис нейтрофилов в зону воспаления. Он синтезируется макрофагами, лимфоцитами, фибробластами, клетками эпителия и

эпидермиса. ИЛ-8 обладает выраженными провоспалительными свойствами, вызывая экспрессию молекул межклеточной адгезии и усиливая прилипание нейтрофилов к эндотелиальным клеткам и субэндотелиальным матричным белкам. При РА концентрация ИЛ-8 возрастает за счет его гиперпродукции нейтрофилами [1,5].

В ходе наших исследований статус витамина D определялся по классификации Международного Института Медицины и Комитета Эндокринологов, согласно которой уровень этого витамина ниже 20 нг/мл расценивается как его дефицит, уровень в пределах от 20 до 30 нг/мл – как его недостаточность, а уровень в диапазоне 30-50 нгмл – как нормативные значения.

Исследование витамина D в сыворотке крови лиц контрольной группы выявило колебание его уровня в пределах от 30,3 до 48,7 нг/мл, что в среднем составило 37,5±1,67 нг/мл.

Значения этого показателя у больных РА оказались достоверно ниже значений здоровых лиц, что согласуется с данными исследований Kostoglou-Athanassiou с соавторами [8] и Hong с соавторами [6]. Так, среднее содержание витамина D в группе больных с серонегативным РА составило 23,8±1,27 нг/мл, что на 57% (p<0,001) ниже контроля. В данной группе из 21 больного недостаточность витамина обнаружена у 12-ти, а дефицит – у 4 человек.

Серопозитивный РА сопровождался более выраженным гиповитаминозом D. Средний уровень витамина в этой группе составил 20,4±0,95 пг/мл, что оказалось на 84% (p<0,001) ниже контрольных значений и на 17% (p<0,05) ниже значений в серонегативной группе. В данной группе из 53 пациентов недостаточность витамина выявлена в 17 случаях, а дефицит – в 28 случаях.

Нами был проведен корреляционный анализ между уровнем цитокинов и витамина D в крови больных РА. Как показали его результаты, у больных РА существует достоверная отрицательная корреляционная связь между содержанием витамина и уровнем основных провоспалительных цитокинов ИЛ-6 и ФНО-α. При этом коэффициенты корреляции составили соответственно r=-0,596 (p<0,01) и r=-0,694 (p<0,01) при серонегативном РА, r=-0,524 (p<0,01) и r=-0,644 (p<0,01) при серопозитивном РА.

Влияние витамина D на состояние иммунной системы было установлено в многочисленных исследованиях. Выявлено, что витамин D, взаимодействуя с цитоплазматическими рецепторами иммунных клеток, действует как иммуномодулятор. Рецепторы к витамину D (VDR) обнаружены в местах дифференцировки клеток иммунной системы – тимусе и костном мозге, а также в мононуклеарах, дендритных, антигеннесущих и активированных В-клетках, в CD4+ Т-лимфоцитах и нейтрофилах. Активация VDR в клетках иммунной защиты ведет к транскрипции генов и инициирует антипролиферативные и иммунорегулирующие процессы [6,11].

У больных РА VDR были найдены на макрофагах, хондроцитах и синовиоцитах в синовии и областях хрящевых эрозий только в пораженных участках, а в здоровой синовиальной оболочке экспрессия генов отсутствует. Местнопродуцируемый витамин D может действовать как паракринный фактор, снижая активность Т-клеток за счет ингибиции клеточной пролиферации и снижении продукции медиаторов клеточного воспаления. Предполагается, что активная форма витамина подавляет процессы разрушения хряща через ИЛ-1β-опосредованную продукцию металлопротеиназ матрикса. Данные литературы свидетельствуют о том, что витамин D необходим для оптимального противовоспалительного ответа моноцитов и подавления экспрессии провоспалительных цитокинов, включая ФНО-α, ИЛ-2, ИЛ-6, ИЛ-8, ИФН-γ и т.д. Витамин D отвечает также за поддержание низкого уровня активных форм кислорода в организме. В ряде работ выявлена отрицательная корреляция витамина D с активностью РА. Учитывая все вышеуказанное можно предположить, что низкий уровень этого витамина в организме может стать индуктором воспаления и предиктором разрушения хрящевой ткани при РА [3,9,13].

Эксперименты показали, что дополнительное введение в диету животных витамина D предупреждает прогрессирование артрита до тяжелых форм. В большом проспективном когортном исследовании, длившемся 11 лет, авторами было показано, что большее потребление витамина D (>468 МЕ/сут по сравнению с 221 МЕ/сут) обратно коррелировало с риском развития РА [10,13].

Заключение

Таким образом, наши исследования показали высокие уровни провоспалительных цитокинов как в серопозитивной, так и в серонегативной по РФ группах больных РА по сравнению с контролем. Высокая продукция цитокинов в обеих группах сочеталась с низким содержанием виамина D. Выявлена достоверная негативная корреляция витамина D с уровнем основных провоспалительных цитокинов – ФНО-α и ИЛ-6. Полученные результаты демонстрируют, что дефицит витамина D может являться одним из факторов, осложняющих

течение РА, и обосновывают необходимость применения препаратов этого витамина в комплексной терапии заболевания.

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QR – Issue   QR – Article

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SECTION 29. Literature. Folklore. Translation Studies

THE LITERARY DESCRIPTION OF TRASFORMATION PERIOD PSYCHOLOGY IN THE STORY OF "OZODLIK" BY SH. KHOLMIRZAEV

Abstract: The article is devoted to the study of literary interpretation of the transformation period through the study of "Ozodlik" by the writer Shukur Kholmirzaev. The issue of adjustment to independence of members of society, viewpoints attitudes of characters of the story that belong to various layers of society are literary interpreted.
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Introduction

The period of time starting from 90s of the XX century and ending at the end of the first decade of XXI century is considered to be *transformation period* from one type of governmental system to another in post-soviet countries that it caused significant changes in spiritual-mental minds of people.

Materials and Methods

The researcher N.B. Burkina defines the transformation periods in society's life as follows: "The transformation period is a stage that appears during fast, catastrophic (revolutions) or slow, long lasting (gradual) regression and fall of the previous era" [1].

From mid 80s of XX century new period did not start in former Union countries, the stage between new and old periods – the transformation period began. There is a need to verify this claim. Honestly, the stage known as "exposure time" at the end of the soviet time, according to the plan of people that started this movement, was not a transformation period at all, but it was the last attempts to "reanimate", to save it. However, since the society had already matured a demand to renovation, these processes gave completely different fruits than expected, more specifically; they started the process that eroded the soviet system completely. For this reason, when we talk about transformation period in the near history of ours, we can look back from mid 1980s. The following words of politician M.Kirgizboev can also be proof of our opinion: "By the end of 80s of XX century, although Uzbekistan had not declared her National Independence, changes related to building up civil society had started to take place" [2].

If the transformation period is a time that is between "old period" and "new period", we have to verify what kind of transformation period was the period that started in mid 80s in our country and between what periods did it occur. Certainly, Uzbekistan was a socialistic republic included in the former Union. Our country chose transformation from social attitudes based on administrative bossiness to free citizenship society based on marketing policy. The first president of the republic I.A.Karimov had stated as follows on this topic in the initial years of liberty: "**The termination goal should stay to build a strong democratic legal state and civil society** based on stable marketing economy and open foreign policy. Only such society can ensure proper lifestyle, reservation of rights and freedom, restoration of national traditions and culture, mature people as individuals spiritually and morally for Uzbek people. At the same time market

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is not only a goal, but it is also means and way of development of new values, completely increasing prosperity of people in terms of quality… The task is to soften this process in order to put it into practice with the least loss for inhabitants; we should not allow social shocks to emerge" [3].

This process required to consider unique aspects of mentality of our people and country that M.Kirgizboev wrote as follows on this issue: "One of the important events in this period was to work out fulfillment conception based on five main rules to form marketing economy, construction of state for *transformation period* in Uzbekistan, generally, modification of every sphere of society by President I.A. Karimov" [2].

According to the opinion of sociologist N.S. Melnikova, the transformation periods are usually noticeable for their following typological characteristics:

- The existence of traditions and renovations at the same time;

- The emergence of "passion" and activation of social-cultural work;

- Cultural diversity, ambiguity of meanings of terms, mixture of methods, standards, principals of viewpoints and esthetic units;

- Special attitude towards time, aspiration towards dynamism of life activity.

Considering these characteristics N.S. Melnikova pointed out to following separate transformation periods in the history of Russia: The age of Kiev Russian, the second half of XVII, the Silver age period (the end of XIX century and – the beginning of XX century), the initial years of soviet government (1917-1924 years), "warmness" (the 60s of XX century), post-soviet period (from the end of 80s of XX century to present days) [4].

As it can be seen, some of the transformation periods mentioned by N.S.Melnikova related to the history of Russia (the initial years of soviet government, "post-soviet" period) can also be suitable for the history of our society.

We can witness that diverse methods, depiction principals have been employed by various writers in order to interpret transformation period that began in mid-80s of XX century and continuing up until present days. For instance, along with traditional realistic depiction (M.Muhammad Dust. "Lolazor", Sh.Kholmirzaev "Olabuji", "Dinosaur", U.Hamdam. "Muvozanat") one can see works created based on symbolic-metaphoric depiction based on high degree literature style (O.Mukhtor. "Turt tomon kiblah"; Kh. Dustmuhammad. "Surok", "Bozor"; A.A'zam. "Ruyo or Ghulistonga safar") and modernistic depiction (N.Eshonkul. "Maymun yetaklagan odam).

A famous scholar of literature, Professor Umarali Normatov in his article "hope-giving tendencies" announced in the magazine "Sharq yulduzi" stating our society was undergoing complicated, controversy, a bit hazardous, and at the same time, very responsible and hope-giving periods in its history wrote as follows: "On one hand, as real devoted tearless heroes of our people had expected for many years, we have gained our Independence. Uzbekistan has been recognized as an independent state all over the world, the empire lasted nearly one and a half century, the tyrant shackles have been broken into pieces, and the dominant ideology that had conquered the mind of nation, all aspects of social-political, spiritual life of people to make them follow its trace has been destroyed. On the other hand, tragic aftereffects of tyrant system policy and dominant ideology have been tricking us on every step we take. Social-political crisis and spiritual degeneration have been noticed in the environment we are living." [5] As it was mentioned by U.Normatov, the situation during the initial years of the independence was directly related to the crisis sprung up during the last years of soviet society and impacted on every sphere of society's life that the aftereffects of the crisis had been continuing up until his time.

The erosion of old structure of society requires to renovate social attitudes accustomed by members of the society, it brings out need to modification. As leading life became obvious to be impossible with old outlook, habits and practices, the need to comprehend the issue of how to lead life from now on and for ever more through analyzing recent history so as to change imaginations on present days and future arose. Consequently, the heart, the spirituality of a human being turned to be the field where the issues of transformation period were solved.

Another renowned scholar of literature Izzat Sulton had expressed his opinions during the conversation with a correspondent of the magazine "Sharq yulduzi" in 1993 as follows: **"We are in a fear period.** Everyone should recognize their own position in the world of literature. We have not been able to recognize yet. I have not seen a single writer who has been going on a certain path yet. … **Now, a work devoted to the time, to the heroes of the new period is also needed.** We have to direct the attention of the young towards this trend" [6].

"The civilizational uniqueness on transformation period" by I.V. Kondakov, K.B. Sokolov, N.A. Khrenov who researched into characteristics of self-re-comprehension of society on transformation period included following opinions in their book: "Every time a new generation re-comprehends the history of an individual, they choose the one that is present and important for themselves at the moment, they wipe out not necessary characters to the second plan. In short, people learn only the things they need from the history. Diverse political, social forces see what they want to see in the social memory" [7].

The one we are going to analyze, the work of Shukur Kholmirzaev "Ozodlik" (1994) is of great importance among his creations devoted to the transformation period. The goal of the writer in this story, which was written just after three years of independence, was to reflect the adjustment process of people that belong to diverse class to the new social-economic and political conditions. The writer employed literary parallelism in order to fulfill literary intention in the story. The partridge (Khoinbeka) accustomed to the cage and Mansur emancipated from the prison are the characters created in the way of literary parallelism in order to reflect changes occurring in the society that gained the independence.

The writer mentions a few descriptions in order to state contextual co-relationship between these two characters. For instance, the information about the emancipation of Mansur from the prison three years ago indicates that the country had also gained her independence three years ago and the character is meant to parallel understanding of changes occurring in the life during the independence period. The characters Khoinbeka accustomed to the cage, and the horse got used to dragging the plough from one end to the other end of the field, but forgot to walk on the smooth way are added in order to expose the situation of people who got used to leading their life thanking for what is given despite restrictions in their freedom.

The author makes members of various classes and ranks of the society to meet in one real life situation that it gives a chance to observe their attitudes towards issues of the transformation period, their feelings came to existence as a result of changes of the time. Mansur, former convict, works as an inspector of telephone wires, at the same time he built a house in the mountain and feeds cattle and sheep that his family leads a stable life. Olim – the deputy of the chairman of a technical college, Shotura calls Olim as an "official". Shotura himself is musician teacher. Utbosar is a businessman; he is busy with building holiday destinations for people in the mountain with his prudence. The character of a senile guardsman represents various viewpoints towards religion of the transformation period.

All of the mentioned characters have their own considerations about life, changes on people, and the current affairs of the time, they conclude on these issues basing on their own viewpoints and level of maturing. They sometimes debate with each other standing on opposing poles, and even come close to the degree of fighting. However, the plot of the story is developed in such way that the characters move from the mood of misunderstanding each other and enmity towards mutual understanding and agreement. The most important, conceptual idea put forward in the story is also developed through this characteristic, in other words, the moral massage the

writer is going to deliver here is that the people who have become disorientated in front of sudden changes can solve social-economic issues through mutual understanding and collaboration and find a path to the development.

The character Mansur unconsciously reminds us off Khurram dervish in the novel of "Olabuji" by Shukur Kholmirzaev. Both of them were involved in a certain trouble in their student years which led them to be accused of murder and spent ten years of their lives in the prison due to slender. Khurram of the novel "Olabuji" says: "I had also written that I punched a Russian man". And the Mansur says: "we found out later that the most coward adult among us had stabbed a snobbish man". We can see that both of them had spent ten years of their lives in the prison despite being innocent, they had experienced the injustice of the soviet government. The writer does not let these two characters to be considered as antagonist with the fact that they were jailed. Both of them were not affected to be an evil person in the prison at all. They are used to looking around with their own eyes, differentiate justice and injustice based on their own intellects, stand against injustice with everything in their power. Khurram contributes to the restoration of the true history of Uzbek nation; he is attempting to wake up national pride of people through this action of his own. And Mansur cannot bear with the destruction of the nature under the feet of people, the extinction of living animals due to apathy and cruelty of people; he also does everything in his power to stand against this issue. He even comes close to fight with some people for his this character.

The character of partridge is of great importance in the story. At one glace, every event seems to be rotating around the issue of preserving nature and not to touch its natural stream. However, the story is not restricted to discussing just one issue. Throughout the story the events related to the partridge grown up in a cage are put parallel to the issue of liberty of a human being. By describing the picture of partridge set free to the nature, the writer indicates the conclusion that the natural flow of the life should not be destroyed. The former system of government had put block to the natural historical evolutionary process of the life of society, attempted to control it artificially through illogical rules and regulations, restricted it with artificial barriers. The aftermath result was that the society faced social-economic crisis. Millions of people who were accustomed to living thanking for what is given, not crossing the artificial borders set by former soviet government could not get used to the conditions and changes of a new time that they seemed to feel disorientated like to a partridge set free to the nature.

The article of the scholar of literature Marhabo Kuchkorova named "Symbol and scenery on the works "Ozodlik" and "Fiesta" the character of

partridge in the story of "Ozodlik" was clearly studied in terms of its symbolic sense. For instance, M.Kuchkorova wrote as follows: "the partridge of Mansur named Khoinbeka – the symbolic personification of Uzbek nation, the cage is the symbol of captivity, the symbol which threatens freedom of a person. … The return of Khoinbeka to her cage again is a symbol of an insane person who is accustomed to living in dependency". [8] Indeed, the character of partridge is of great importance on opening the true meaning of the story, and delivering moral message of the writer. M.Kuchkarova states that the character of Khoinbeka is a symbolic personification of a person who is accustomed to living thanking for what is given for a long time: "Khoinbeka is actually the symbol of the Uzbek who got used to thanking for what is given in the former soviet period". [8]

The situation of the partridge that hot used to its cage and owner is put parallel to the situation of the people of society who got used to the conditions of colonization government. Through observing the situations of partridge the characters think about their own conditions. Previously the senile guardsman had narrated about the destiny of a horse that got used to dragging plough. This situation is latterly remembered in the episode when the partridge is set free to the liberty. However, exactly this case should be specifically paid attention that one of the characters – Shotura asks about the horse: "We have hardly been able to get used to the liberty although we are humans… Right, Khattabich? Hey, did the horse learn how to walk properly on a smooth surface later?". "Yes, slowly but surely, said the old man. – Then flying to the ravine…" Shotura did not want to listen to the answer till the end that he claimed "That is all" cutting the words of an old man, because he wants to hear good things about the fate of a horse. The character here definitely wants to conclude that the story has a good ending, it is obvious. This case is a proof that the people here wants to look at the future with optimistic views. The plot of the story has an intention to inspire that a human being is differentiated from either a partridge or a horse for his intellect so that he can adjust to the situation and restart his life from the very beginning.

The story of "Ozodlik" was also analyzed by another scholar of literature Sh.Doniyorova in her article under the title of "The spiritual world of hero". "The story of "Ozodlik" by Shukur Kholmirzaev is not just an achievement of the writer, but it is also the success of story writing of 90s on opening the spiritual world of the hero of time" [9], as Sh.Doniyorova wrote these words, she did not empathize the spiritual world of the hero for vain. Therefore, we make sure as the read the story of "Ozodlik" that both the roots of problems of time and the ways to solve these problems are directly related to the spiritual world of characters of time.

By the character of partridge, the writer brought about the most important social issue for the transformation period, in other words, he literary analyzes the issue of human's need to get used to the independency. Mansur promises his companions to teach partridge to free life. Distinctively from an animal that got used to a man and his sympathy, the human himself is an intelligent creature. The adjustment of a human being to freedom should start from his independent steps. Although the characters Mansur and partridge Khoinbeka was put parallel to literary interpretation, they have several different sides as well. Mansur chooses the way to adjust to the freedom through finding his own way instead of returning to the prison as some of the convicts. He has already taken this decision at the time he was in a cell. Mansur narrated about this to his companions when they went hunting partridge. That is to say, it is possible to conclude that there were two ways in front of the hero: the first was to choose an easy option and just returning to the prison while the other one was to choose a long and arduous path which would teach him to the independence and balance both spiritual and materialistic life. Mansur chooses the second way. The writer does not describe the harsh life Mansur led in the initial three years after emancipation from the prison, but through showing the life he achieved as a result of that period, he establishes a social-spiritual correct choice made on time by Mansur.

The life of Mansur is put parallel to the transformation period is the life of society, to the process of rebalancing through adjustment to new terms and conditions. Mansur fond his way as he gained liberty, but not every person can follow his way and many returns back to the prison. This condition reminds off people who could not adjust to a new social situation and yearned for the old way of life. However, as there is no logic from returning back to the old governmental structure, it is also impossible, because the progress does not return back. Every member of society should realize this truth sooner or later and will have to take his/her social-spiritual decision. The attempt of a human being to adjust to independency, choosing the way of responsibility for his own life, is considered to be his first steps taken towards the freedom.

The issue of liberty is also given by situations, moods of other characters except Mansur in the story. One of such characters is a musician teacher Shotura that he also has unique heart pains. His behaviors, his attitude towards, Mansur, the deputy of chairman Olim, underestimation towards old guardsman have vengefulness. He treats his companions looking down to them that he calls the deputy of chairman Olim as "kurra" (sphere), the old guardsman as "старик", "Khattabich". The plot also points out to the cause of vengefulness. As the controversy between characters get more and more

intense, it ends up with fighting which leaves Shotura in the following state: "the teacher has fell down on the snow with his buttocks, he was forced to sit down and suddenly started to sob loudly bending his head". Shotura who was left in such state after a fight against Mansur narrates a complete different story in order to explain the reason why he began sobbing:

"– He killed me, Mansur, listen! – The teacher looked at the half-burned firewood that was starting to burn fumingly, sobbed silently shaking his head. – I had … had entered to the greengrocer's to buy potato for seed, the sales assistant: "Teacher, this is expensive, in the cost of commerce", he said. "Go into the storage, your student is manager. He will give you cheaper, you will be able to choose", he said. The stupid I went to the storage. I looked; it was truly my student… I greeted. I expressed my purpose. So – "I need a sack of potato, - I said. – Spring is near, I have three or four are of land, you know. If I plant this, the children and we will live on it later. Who knows how the cost will be in the spring", I said. Can you imagine what he said? "You can buy from the shop, teacher. I will not give you potato", he said. "Why?" – I asked. – This is the storage of the government, your potato is cheap…" I said. "No, I shall not give you even if I give to everybody", he said. "Why?" "Because you used to always put me a bad mark. You used to state every day that I would not be successful in my life. Here I am. I have become a successful person. What about you?" he said. Freely. He stated without bothering." [10].

Apparently, the teacher Shotura also feels changed attitude towards his job, his social position of the society during the transformation period. As he could not digest being humiliated by his former student, he revenges from the alcohol ("Pour it. I am burning inside"). The humiliated person usually tends to be inclined to humiliate others as well. One of the former students of Shotura revenges from him for being humiliated during his student years by humiliating himself. In turn, Shotura also tries to take his revenge from people around him, such as, the deputy of chairman Olim, Mansur, old guardsman; however, he could not succeed in his attempt, and consequently begins to sob himself and will have to tell his grief to his conversation partners. Because of attitude of people like his student towards him, Shotura begins to feel himself as a non-necessary person for the society. ("Shit, I am a non-necessary person").

Teacher Shotura is unable to recognize the fact that his previous imaginations about life is false, the mood to miss former period shapes in his mind as he sees changes he does not want to happen on people and time (The enemy was concrete at that time, the way was also concrete… Everyone was aware of this fact"). Shotura's determination and thoughts, his moods are very controversial. Although he misses some things from the past, he is very well aware of falsehoods in the soviet period as an educated person ("My whole life was spent in the falsehood. – He then began to shout. – I was deceived").

The issues of transformation period required teacher Shotura to choose a suitable way for himself, adjustment to a new condition so as to find his own position in this situation. However, since some of the evil people were getting power all at once, teacher Shotura had developed a complete negative outlook towards a change of period. It is also clear that some kind of people who want to use the naivety, immaturity and the disability to get rid of former habits of people to their own advantage. Different from Shotura, Mansur and Olim try to see positive aspects of changes in the society. "Why, is my way wrong? Reverse… There, as my friend Olim said, I am on the most natural way. God blast me… I unconsciously chose this way" as a response for these words, teacher Shotura "Come on, yours can't be an example for me. You are just one among the thousand" says. As we have witnessed, teacher Shotura lacks determination, looking at the life with trust instead of getting lost among various considerations.

Conclusion

The characters of the story "Ozodlik", especially, the character of Shotura fully opened the ability of Shukur Kholmirzaev to picture realistic scenery. The writer does not overwrite anything in order to describe feelings of characters, but he managed to reflect their mood through his own speech and their movements.

In general, throughout the story the author struggles to literary understanding the mood, situation and spirituality of people of transformation period. The ability of the writer is that the conclusion of the characters to the situation is not artificial and illustrative. Yet, they naturally come to existence through the words and treatments of characters to each other.

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SECTION 2. Applied mathematics. Mathematical modeling.

INVERSE SPECTRAL PROBLEM WITH INDICATED VALUES OF COMPONENTS OF THE EIGENVECTORS

Abstract: *The article describes the application of the Inverse Spectral Problem 2 [2] with 13 selected values of the components of the eigenvectors related to the model of digitization of indicators of individual consciousness of the individual. For 13 values of selected values from the matrix of eigenvectors C_{66}, a cognitive model of assigning names and meanings to 6 measured indicators of individual consciousness was developed, and 6 correlated indicators of individual consciousness with given 4 latent factors of individual consciousness for 20 points of time were found to correspond to real trends of mutual trends.*

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ОБРАТНАЯ СПЕКТРАЛЬНАЯ ЗАДАЧА С ВЫДЕЛЕННЫМИ ЗНАЧЕНИЯМИ КОМПОНЕНТ СОБСТВЕННЫХ ВЕКТОРОВ

Аннотация: *В статье излагается применение Обратной Спектральной Задачи 2 [2] с 13 выделенными значениями компонент собственных векторов, относящихся к модельным цифровым значениям валидных и измеряемых показателей индивидуального сознания. Для 13 значений выделенных значений из матрицы собственных векторов С66 разработана когнитивная модель присваивания имен и смыслов 6 измеряемым показателям индивидуального сознания, выявлены соответствме реальным трендам взаимных трендов 6 модельных показателей индивидуального сознания за 20 моментов времени.*

Ключевые слова: *обратная, спектральная, задача.*

Ввведение

В работе [1] разработана модель цифровизации показателей индивидуального сознания. Входным объектом является матрица собственных векторов $C^{(\ell)}_{66}$, где ℓ-номер решения Обратной Спектральной Задачи 1 С.Р. Chalmers [2]. В ОСЗ 1: $\Lambda_{66}=>(R^{(\ell)}_{66},C^{(\ell)}_{66},\ \ell=1,\ldots,k_{\ell}<\infty$, где $\Lambda_{66}=\text{diag }(\lambda_1,\lambda_2,\ldots,\lambda_6)$, $\lambda_1>\ldots >\lambda_6>0$, для постоянных значений $\lambda_1,\lambda_2,\ldots,\lambda_6$ собственных чисел моделируются полные матрицы собственных векторов $C^{(\ell)}_{66}$, согласованных с матрицей собственных чисел (спектром) $\Lambda_{66}=\text{diag }(\lambda_1,\lambda_2,\ldots,\lambda_6)$, $\lambda_1>\ldots >\lambda_6>0$, таким образом, что выполняются равенства $R^{(\ell)}_{66}C^{(\ell)}_{66}=C^{(\ell)}_{66}\Lambda_{66}$, $C^{(\ell)\text{т}}_{66}C^{(\ell)}_{66}=C^{(\ell)}_{66}C^{(\ell)\text{т}}_{66}=I_{66}$, где $\text{diag}(R^{(\ell)}_{66})=(1,\ldots,1)$,

$\text{tr}(R^{(\ell)}_{66})=1+\ldots+1=\text{tr}(\Lambda_{66})=\quad \lambda_1+\ldots+\lambda_6=6$,   [4]. Матрица Λ_{66} - одна, матриц $C^{(\ell)}_{66}$ - много. Здесь матрица Λ_{66} может быть выходным объектом ПСЗ [5]: $R_{66}=>(C_{66},\Lambda_{66})$, имеющей одну пару решений (C_{66},Λ_{66}). В ОСЗ 2 моделируется не единственная пара решений $(C^+_{66},\Lambda^+_{66})$, где матрица собственных векторов $C^+_{66}=[\mathbf{c}^+_1|\mathbf{c}^+_2|\ldots|\mathbf{c}^+_6]$ собственных векторов $\mathbf{c}^+_j=(c^+_{1j},c^+_{2j}\ldots c^+_{nj})^T$, $j=1,\ldots,6$, имеет заданные значения выделенных компонент собственных векторов. Матрица собственных чисел Λ^+_{66} отличается от матрицы Λ_{66} из ПСЗ, из ОСЗ 1. ОСЗ 2 имеет вид либо $C^{(\ell)}_{66} =>[C^{0+}_1|C_2] =>(C^+_{nn},\Lambda^+_{nn})$, либо $C_{66} =>C_{66} =[C^+_1|C_2] =>(C^+_{nn},\Lambda^+_{nn})$, где $C^+_{66}=[C^+_1|C^+_2]$. В первом случае

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входным и преобразуемым объектом является решение $C^{(\ell)}_{66}$ из ОСЗ 1, во втором – решение C_{66} из ПСЗ. В ОСЗ 2 моделируются заданные значения компонент некоторых собственных векторов, а в ОСЗ 1, изменяя значения заданных собственных чисел. В ОСЗ 1 моделируются бесконечное множество матриц собственных векторов для постоянной матрицы собственных чисел. В ОСЗ 1 нельзя управлять значениями компонент собственных векторов, а в ОСЗ 2 – можно, но не всеми значениями.

Задачи управления выделенными значениями компонент собственных векторов необходимо решать при разных применениях ОМ ГК [6-9]. Ниже излагается ее применение ОСЗ 2 при моделировании присвоений имен, смыслов, значений для показателей индивидуального сознания[1].

В данной работе мы повысили порог чувствительности к величине выделяемых компонент собственных векторов. Для этого уменьшим значение порога [1] c(j), j=1,2,3,4, с 0.5191, до 0.3. Это соответствует «уровню верхней грани» интервала между «очень слабая» и «слабая». Эта грань дополняет слева использовавшийся в [2] интервал «умеренная»». Качественно интерпретируется эта грань как «очень слабая» - назовем ее «узкий интервал №1». Мы дополнили интервал (от 0.3 до 0.5, интервал №2) и -«слабая, умеренная», и интервал от 0.5 до 0.7 (интервал №3, «заметная» связь (moderate positive)). Теперь количество выделенных значений компонент собственных векторов из матрицы $C^{(\ell)}_{66}$ увеличивается с 5 до 13.

Участие только 5 выделенных значений незначительно [1] меняет матрицу собственных чисел, позволяет когнитивно осмыслить и назначить имена и смысл 6 z-переменным [1]. Без изменения главного критерия, применяемого в подобных исследованиях–критерия Кайзера-Дикмана[1,2,4-7]. И без изменения значения 1-го собственных числа λ_1. Но этот критерий выглядит «грубым» среди критериев выделения доминирующих собственных чисел, равных ℓ. Этот успех подвинул нас рассмотреть случаи уменьшения значения 1-го собственных числа λ_1 и увеличения количество выделенных весомых значений компонент собственных векторов из матрицы $C^{(\ell)}_{66}$.

Расширение диапазона изменений значений выделенных компонент собственных векторов выявили ряд эффектов в модели ОСЗ 2 (смотрите ниже). Входным объектом в ОСЗ 2 является выходной объект $C^{(\ell)}_{66}$ из модели ОСЗ 1. Решение ОСЗ 2 – матрицы C^{+}_{66} и Λ^{+}_{66} позволили реализовать вариант ОМ ГК и получить модельные выборки значений 4 вербальных и 6

измеряемых показателей индивидуального сознания за 20 моментов времени.

Полученные модельные данные не имеют аналогов (ранее не моделировались) и ниже применяются для сопоставлений тенденций изменений (трендов) 6 измеряемых показателей индивидуального поведения, полученных преобразованием модельных значений 4 валидных показателей. Валидные показатели являются удобными, при валидном измерении измеряют именно «то что нужно», а не что-то другое взятое из сложным методик [9]. Мы используем наши 4 валидных показателей индивидуального сознания (в психологии) как аналог ключевых факторов произ водства (KPI в экономике предприятий).

Исходные данные, содержательные смыслы валидных переменных

Скрытые социально-экономические факторы, Нахождение смыслов скрытых социально-экономических факторов, Главные скрытые факторы индивидуального сознания, Скрытые факторы индивидуального сознания, Алгоритм моделирования значений показателей индивидуального сознания, Пример присвоения имен значениям показателям индивидуального сознания приведены в работе [1].

Анализ только присвоений смыслов z-переменным, имеющим умеренную степень (const(j)=0.5191,j=1,2,3,4) своих «весов». Выбор этого критерия связан с нашей возможностью придать смыслы z-переменным, влияющих на 4 доминирующие по величине дисперсий y–переменные.

Рассмотренная в [1] матрица весов $C^{(\ell)}$ получена при реализации ОСЗ 1: $\Lambda^{+}_{66} => (C^{(\ell)}_{66}, R^{(\ell)}_{66})$, $\ell=1,\ldots,k_\ell$. Мы должны получить решение ОСЗ 2 – матрицы $(C^{+}_{66},\Lambda^{+}_{66})$, .Обозначим новую матрицу с выделенными значениями компонент собственных векторов из подматрицы C^{+}_1 размерности 6-на-4 так:$C^{+}_{66}=[C^{+}_1 C_2]$. Здесь выделенные значенья (13 штук) являются значениями компонент 4-х первых собственных векторов из C^{+}_1. После реализации модели ОСЗ 2 получим 2 матрицы C^{+}_{66} и Λ^{+}_{66} и проведем когнитивный анализ. Мы реализуем модель ОСЗ 2, имея в качестве входного объекта матрицу $C^{(\ell)}_{66}$, вида: $C^{(\ell)}_{66} => C_{66} = [C^{+}_1|C_2] => (C^{+}_{nn},\Lambda^{+}_{nn})$.

Обратная Спектральная Задача 2 (ОСЗ 2) формулируется так [2]: для матрицы $C_{nn} = [C^{+}_1|C_2]$ (с новыми значениями $c^{+}_{kj}, j=1,\ldots,\ell$, $k \in \{1,\ldots,n\}$) требуется найти новую пару матриц $(C^{+}_{nn},\Lambda^{+}_{nn})$, такую, что матрица $C^{+}_{nn}=[C^{+}_1 C^{+}_2]$ имеет те же заданные пары индексов (k,j) и те же новые значения компонентов c^{+}_{kj}, $j=1,\ldots,\ell,k \in \{1,\ldots,n\}$, что и у первых ℓ собственных векторов $\mathbf{c}^{+}_{\mathbf{j}}=(c^{+}_{1j},c^{+}_{2j}\ldots c^{+}_{nj})^T$, расположенных по столбцам

подматрицы C^+_1 матрицы $C^+_{nn}=[c^+_1|c^+_2|\ldots|c^+_n]$. Матрицы C^+_{nn} и Λ^+_{nn} удовлетворяют равенствам: $C^{+T}_{nn}C^+_{nn}=C^+_{nn}C^{+T}_{nn}=I_{nn}$, $C^+_{nn}\Lambda^+_{nn}C^{+T}_{nn}=R^+_{nn}$, $\lambda^+_1+\ldots+\lambda^+_n=n$, $c_j{}^+\Lambda^+_{nn}c_j{}^{+T}=1$, $c_i{}^+\Lambda^+_{nn}c_j{}^{+T}=r^+_{ij}$, $r^+_{ij}=r^+_{ji}$, $i=1,\ldots,n$, $j=1,\ldots,n$, $C^+_{nn}=[C^+_1 \quad C^+_2]$, где корреляционная матрица R^+_{nn} имеет новые матрицы собственных векторов и собственных чисел $\Lambda^+_{nn}=\mathrm{diag}(\lambda^+_1,\ldots,\lambda^+_n)=n$. $\lambda^+_1+\ldots+\lambda^+_n=n$, $\lambda^+_1\geq\ldots\geq\lambda^+_n$. Модель ОСЗ 2 имеет вид: $C_{nn}=[C^+_1|C_2]=>(C^+_{nn},\Lambda^+_{nn})$.

Решения ОСЗ32: пары матриц Λ^+_{nn}, $C^+_{nn}=[C^+_1 C^+_2]$ необходимы для реализации ОМ ГК: $(C^+_{nn},\Lambda^+_{nn})=>(R^+_{nn},Z^{(t)}_{mn},Y^{(t)}_{mn})$, $t=1,\ldots,k_t<\infty$.

В работе [1] присвоение смыслов z-переменным проводилось по одному критерию, а не по новым 3 критериям, имеющих 3 степени весовых градаций.

Наш выбор нового поликритерия не связан с нашей возможностью придать смыслы z-переменным, влияющих на 4 доминирующие по величине дисперсий у–переменные. Это – применение модели ОСЗ 2.

Шаги присвоения имен 6 z-переменным по старому критерию относительно прост. Так как $\mathrm{corr}(y_1,z_5)=0.5191\geq\mathrm{const}(1)$, то это означает, что корреляция между 1-ой у–переменной и 5-ой z-переменной выражена умеренно: $\mathrm{corr}(y_1,z_5)=0.5191$, то придадим смысл этой переменной. Анализ всех «весов» выявил следующие смыслы. В уравнении для 2-ой у-переменной y_2 «вес» c_{42} z-переменной имеет умеренную степень корреляции $-\mathrm{corr}(y_2,z_4)= -.6303\geq 0.5191\geq\mathrm{const}(2)$. В уравнении для 3-ей переменной y_3 два веса $c_{13}=-0.5739$, $c_{63}=-0.7854$ при двух z-переменных имеют умеренную и более умеренную степени корреляции: $|c_{13}|\geq\mathrm{const}(3)$, $|c_{63}|\geq\mathrm{const}(3)$. В уравнении для 4-ой у-переменной y_4 вес c_{64} z-переменной z_6 имеет умеренную степень корреляции - $c_{64}=-.6420$, $|c_{64}|\geq\mathrm{const}(4)$.

Эти 5 выделенных компонент 4-х собственных векторов матрицы $C^{(\ell)}_{66}$, являющегося одним из решений ОСЗ 1. Этих выделенных элементов мало для нашей модели ОСЗ 2, которую будем приме нять к матрице $C^{(\ell)}_{66}$.

Реализуем (Таблица 2) модель ОСЗ 2 вида: $C^{(\ell)}_{66}=>C^{(\ell)+}_{66} =>(C^+_{66}, \Lambda^+_{66})$. Реализация этой схемы означает применение моделм ОСЗ 2 к решению модели ОСЗ 1. Так как значение номера ℓ зафиксировано, то в дальнейшем в обозначении $C^{(\ell)}_{66}$ не будем его использовать, но будем помнить, что матрица C_{66} является решением ОСЗ 1, а не решением ПСЗ.

В работе [1] присвоение имен к каждой из выделенных z-переменных согласовывалось со смыслом соответствующей валидной переменной. Когнитивное моделирование имен было простым. Усложним задачу за счет увеличения выделенных компонент собственных векторов. Полученные эффекты приведены ниже и в выводах статьи. Анализ проводим с применением языка описания ситуаций «показатель– наименование–значение-единица измерения». Ниже реализованы первые 3 возможности языка описания ситуаций. Реализация выбора единиц измерения для показателей будет описаны в отдельной статье.

Выделим 13 значений компонент из 4-х собственных векторов. Перечень 13 значений приведен в Таблице 4 в ее нижней части.

Так как смысл у-переменной y_1 означает «по правде (правильно) поступать», то z-переменную z_5, достаточно сильно коррелирующей с у-переменной y_1, присвоим смысл «честность». Так как смысл у-переменной y_2 означает «принудить к…», а «вес» z-переменной z_2 равен -0.7854 имеет знак, противоположный знаку «веса» z-переменной z_5 $\mathrm{corr}(y_1,z_5)=0.5191$, то z-переменной z_6 припишем смысл «бывший партократ». Смысл z- переменной z_1 в «весом» -0.5739 припишем «проявление командного стиля общения …». Так как смысл у-переменной y_3 означает «обмануть, чтобы…», то z-переменную z_1 припишем смысл «лицо низкой социальной активности»:смысл$(y_3,z_1)=$ «лицо низкой социальной активности», а z-переменной z_6: смысл $(y_3,z_6)=$«стремится обнануть, а не добро совестно сделать что-либо».

Так как смысл у-переменной y_4 означает «страху нагнать», то z-переменной z_4 припишем смысл «проявление деспотизма».

Наша цель в [1] состояла в том, чтобы пока зать возможности применения способа описания ситуаций «показатель–наименование–значение-единицаизмерения», когнитивного моделирования взаимосвязей между измеряемыми показателями индивида и скрытыми неизмеряемыми независимыми факторами воздействия на индивиды разработать модель и получить экспертным путем, руководствуясь только цифровыми фактами: $\lambda_1=2.5000$, $\lambda_2=1.0000$, $\lambda_3=1.0000$, $\lambda_4=1.0000$, $\lambda_5=0.3000$, $\lambda_6=0.2000$ и Правилами 1,2,3,4 [1], получить названия заметных показателей, достаточно тесно связанных с скрытыми факторами воздействия на индивида. Мы обращаем внимание на полезность применения аппарата системы объяснений фактов и правил для модуля извлечения знаний из данных, при формулировке содержательных выводов при интерпретации цифровых результатов применения модели главных компонент в плохо формализуемой науке-индивидуальное сознание.

Разработанная математическая модель [1] цифровизации показателей индивидуального сознания индивида правдоподобно выявляет части элементов языка описания ситуаций «показатель – наименование – значение – единица измерения». Когнитивный анализ и когнитивное моделирование демонстрировали эффективность применения Обратной Модели Главных Компонент [11].

Иллюстративный пример и дискуссия по приданию названий 6 коррелированным показателям индивидуального сознания при заданных 4 скрытых факторах индивидуального восприятия служат обоснованием дальнейших исследований по моделированию значений и выбору единиц измерения n коррелированным показателям индивидуального сознания, оценкам их средних и дисперсий.

Программа-таблица ОСЗ 2

Подробное описание модели ОСЗ 2 приведено в работе [2]. Описание программы-таблицы модели ОСЗ 2 при n=6 приведено там же. В Таблице 1 приводим только отличия в заданных значениях λ_1=1.75, выделенных значений компонентов 4-х собственных векторов (Таблица 1). Окна надстройки Solver и окно параметров надстройки Sjlver такие же, что и приведенные в работе [2]. Здесь их не приводим.

В Таблице 1 выделены красным цветом 6 значе ний цифры 1.0000, полученные из соотношения $C^+_{nn}C^{+\tau}_{nn}=I_{nn}$, а для первых 4-х собственных векторов, применяемых нами ниже, имеет место равенство $[C^{+\tau}]_{\ell n}C^+_{n\ell}=I_{\ell\ell}$, Нарушение равенства $C^{+\tau}_{nn}C^+_{nn}=C^+_{nn}C^{+\tau}_{nn}=I_{nn}$ для последних 2-х собственных векторов (Таблица 1,0.8400,1.1600) является ошибкой модели ОСЗ 2, появляющейся при использовании преобразования $Z_{m6}=Y_{m4}[C^+_1]^T$. Для цели нашей статьи эта ошибка оказалась незначительной, не влияющей на результаты моделирования.

Таблица 1

Программа-таблица вычисления решений Обратной Спектральной Задачи с выделенными значениями компонент собственных векторов

ROW 1	0,3909	**-0,3084**	**-0,5739**	-0,2883	0,0000	-0,5828	**1,0000**
ROW 2	0,5233	**-0,4618**	0,0000	**0,3923**	0,0000	0,5992	**1,0000**
ROW 3	**0,5191**	**-0,3032**	0,0000	**0,4155**	0,6826	0,0000	**1,0000**
ROW 4	0,0000	**-0,6303**	0,0000	**-0,6420**	0,0000	0,4365	**1,0000**
ROW 5	**0,4481**	**0,4397**	-0,2319	**-0,4220**	-0,6116	0,0000	**1,0000**
ROW 6	0,3212	-0,0953	**0,7854**	0,0091	0,0000	-0,5204	**1,0000**
	1,0000	1,00000	1,0000	1,0000	0,8400	1,1600	

$\Lambda_{66}=$	1,75	1,383727	1,366273	1	0,3	0,2	6

	2,5	1	1	1	0,3	0,2

	1	
c_{51}	**0,5191**	**0,5191**
C_{31}	**0,4481**	**0,4481**
C_{12}	**-0,3084**	**-0,3084**
C_{22}	**-0,4618**	**-0,4618**
C_{32}	**-0,3032**	**-0,3032**
C_{42}	**-0,6303**	**-0,6303**
C_{52}	**0,4397**	**0,4397**
C_{13}	**-0,5739**	**-0,5739**

C_{63}	0,7854	**0,7854**
C_{24}	0,3923	**0,3923**
C_{34}	**0,4155**	**0,4155**
C_{44}	**-0,642**	**-0,6420**
C_{54}	-0,422	**-0,422**

Когнитивная модель присвоений имен и смыслов z-переменным

Введем обозначения. Смысл z-переменной z_1, входящей в валидную переменную (у-переменную) y_3, обозначим так: смысл(y_3, z_1). Заданный заранее смысл валидной j–ой переменной (у-переменной) y_j, j=1,…,ℓ, обозначим *смысл* (y_ℓ). Перечень смыслов *смысл* (y_ℓ), j=1,…,ℓ, приведен в столбце 2 Таблицы 2. «Веса» валидных переменных, вычисленных при реализации модели, приведены в столбце 1 Таблицы 2. Веса» валидных пере менных из матрицы $\Lambda^+_{nn} = diag(\lambda^+_1,…,\lambda^+_n)$, согласованную с матрицей $C^+_{nn} = [C^+_1 C^+_2]$ с новыми значениями c^+_{kj}, j=1,…,ℓ,k∈{1,…,n}). Новая пара матриц $(C^+_{nn}, \Lambda^+_{nn})$ удовлетворяют всем равенствам из ПСЗ и ОСЗ: $C^{+T}_{nn}C^+_{nn} = C^+_{nn}C^{+T}_{nn} = I_{nn}$, $C^+_{nn}\Lambda^+_{nn}C^{+T}_{nn} = R^+_{nn}$, $\lambda^+_1+…+\lambda^+_n = n$, $c_j^+{}^T \Lambda^+_{nn} c_j^{+T} = 1$, $c_i^+ \Lambda^+_{nn} c_j^{+T} = r^+_{ij}$, $r^+_{ij} = r^+_{ji}$, i=1,…,n, j=1,…,n, $C^+_{nn} = [C^+_1 C^+_2]$, где кореляционная матрица R^+_{nn} имеет новые матрицы собственных векторов и собственных чисел $\Lambda^+_{nn} = diag(\lambda^+_1,…,\lambda^+_n) = n$, $\lambda^+_1+…+\lambda^+_n = n$, $\lambda^+_1 \geq … \geq \lambda^+_n$.

Продолжим к присваиванию имен к каждой из выделенных z-переменных.

Так как смысл валидного показателя y_1 (у-переменной y_1) означает «по правде (правильно) поступать», то для z-переменной z_5, (доста точно сильно коррелирующей с у-переменной y_1 с «весом» c_{51}=**0,5191**) присвоим смысл «честность» - смысл(y_1, z_5)= «честность».

Смысл у- переменной y_2 означает «««принудить к…»», то для z-переменной z_1, («очень слабо корелирующей с у-переменной y_2 с «весом» corr(y_2, z_1)= c_{21} = -0,3084) присвоим смысл «лицо низкой социальной активности». Смысл(y_1, z_5)=«лицо низкой социальной активности».

Отрицательное значение «веса» corr(y_4, z_5)=c_{54}=**-0,4220** при z-переменной z_5 имеет противоположный смысл, чем смысл z-переменной z_5 с положительным «весом»: смысл (y_4, z_5)=*«античестность»*. В итоге смыслы z-переменной z_5 из разных скрытых показателях y_1 и y_4 являются отрицанием одного другим: смысл (y_4, z_5)=[отрицание] смысла(y_1, z_5).

Другой смысловой оттенок приобретает смыслы z-переменной z_5 из другой пары скрытых показателей y_1 и y_2. «Вес» corr(y_1, z_5)=c_{51}=**0,5191,**

«вес» corr(y_2, z_5)=c_{52} =0,4397 входят в один интервал тесноты связи по шкале Чэддока, но входят в разные смысловые группы. Смыслы групп разные - «по правде (правильно) поступать» и «принудить к…». Так как знаки при «весах» одинаковые, то смыслы z-переменной z_5 «приближены» - в составе группы №1 z-переменная z_5 означает «честность», в составе группы №2 - «честность» в несколько ином аспекте. Придать иной (7-ой по счету) смысл z-переменной мы не можем, ибо нами зафиксировано число n=6 измеряемых показателей. Можем только менять смысл z-переменной так, чтобы он согласовывался со смыслами скрытых показателей, содержащих эту z-переменную. Измеряемый показатель «честность» имеет несколько смысловых градаций, «привязанных» к скрытым показателям. Одна из градаций принадлежит смыслу «правильно поступать», другая - «принудить к…». Принуждение бывает как негативное, так и позитивное. Этот случай ставит задачу декомпозиции смысла измеряемого показателя на более тонкие смысловые оттенки. Усложненную задачу мы не рассматриваем.

Смысл валидного показателя y_2 равен сумме смыслов пяти связанных друг с другом пяти z-переменных:
смысл(y_2)=смысл(y_2, z_1)+смысл(y_2, z_2)+
смысл(y_2, z_3)+смысл(y_4, z_4)+смысл(y_4, z_5)+
смысл(z_5)

Словесно данное равенство цифровых смыслов можно передать следующей фразой. «Индивид, у которого доминирует показатель сознания «принуждать к…» наделен следующими свойствами индивидуального поведения: он относится к разряду «лицо с низкой социальной активности», у него «низкая зарплата», ему присуща антипорядочность, он проявляет «деспотизм», *античестность* его натуры – неоспорима». Найденные смыслы взаимосвязаны между собой.

Измерителем парных связей являются коэфиценты корреляции, силы связи каждой z-переменной z_1, z_2, z_3, z_4, z_5 и равны corr(y_2, z_1)=c_{21}=-0.3084; corr(y_2, z_2)=c_{22}=-0.4618; corr(y_2, z_3)=c_{32}=-0.3032; corr(y_2, z_4)=c_{42}=**-0.6303;** corr(y_2, z_5)=c_{52}=0.4397.

Этот смысл «принуждать к…» коррелирует со

смыслами других −переменных, входящих линейную комбинацию валидной переменной y_2. С умеренно выраженной степенью corr(y_2,z_2)=c_{22}=-0,4618 z-переменной z_2 присвоим смысл: смысл (y_2,z_2)= «низкая зарплата». С «весом» corr(y_2,z_3)= c_{32}= -0,3032 z-переменной z_2 присвоим смысл «антипорядочность»: смысл (y_2,z_3)= антипо рядочность. С весом corr(y_2,z_4)=c_{42}= **-0,6303** z-переменной z_4 присвоим смысл «проявление деспотизма»: смысл(y_2,z_3)=«проявление деспотизма».

Так как смысл у-переменной y_3 означает «обмануть, чтобы…», а ее «вес» -0.7854 имеет знак, противоположный знаку «веса» corr(y_1,z_5)= c_{51} =0.5191, то z-переменной z_6 припишем смысл «бывший партократ». Здесь противоположные смыслы определяют противоположные смыслы z-переменной z_5 и z-переменной z_6, знаки «весов» =corr(y_1,z_5)= c_{51} =0.5191, corr(y_3,z_6)=c_{63} **0,7854** должны быть одинаковыми, что и наблюдаем.

Степень проявления смысла валидного показа теля y_3, имеющего смысл («обмануть, чтобы…») основана на доступной информации, равной 1,383726996/6=23,06%.

Так как смысл у-переменной y_3 означает «обма нуть, чтобы…», то z-переменной z_1 припишем смысл, смысл (y_3,z_1)= «лицо низкой социальной активности», а z- переменной z_6-смысл «стремится обмануть, а не добросовестно сделать что-либо».

Смысл у-переменной y_4 означает «страху нагнать», то z-переменной z_2 припишем смысл, смысл (y_4,z_2)=«низкая зарплата», а z-переменной z_3-смысл смысл (y_4,z_3)= «непорядочность». Сила проявления этой z-переменной относительно высока:c_{44}=-0,6420. Она является главной, зави сящей от смысла валидного показателя «страху нагнать».

Мы когнитивно точно определили смысл для переменной z_4 смысл(y_4,z_4)=«проявление деспотизма». Как оказалось эти качества дополняет смысл другой переменной z_5 «античестность»: смысл (y_4,z_5)=*античестность*. С силой связи с валидным показателем «страху нагнать» (мы ему в нашей модели поставили в соответствие у-переменную y_4) достаточно тесно связана z-переменная z_5, которой мы присвоим смысл *«античестность»*: смысл (y_4,z_5)=*античестность*.

Мы здесь заново не неопределяем смысл z-переменной z_3, ибо он был определен ранее как смысл (y_2,z_3)=антипорядочность (в составе валидной переменной y_2). В составе валидной переменной y_4 смысл ее тот же: смысл (y_4,z_3) - «антипорядочность». Противоположный данному, а именно смысл «порядочность» является составной частью смысла валидной переменной y_1 «правильно поступать», но он (смысл) меняет свое действие на противоположное (на антипорядочность) в составе двух других валидных показателей «принудить к…» (y_2) и «страху нагнать» (y_4). Антипорядочный индивид (пока не знаем интерпретацию этого качества) может принуждать, а порядочный – нет. Порядочный индивид может словесно предупреждать о «страшных» последствиях. В результате реакция индивида будет проявляться в виде настороженности, тревоги, мобилизующих его ответные действия. Но не страх. Об этом «говорит» знак «+» при значении «веса» corr(y_4,z_3)=c_{34}=0,4155.

Так мы интерпретировали противоположные знаки в значениях «весов» corr(y_2,z_3)=c_{32}=-0,3032 () ,corr(y_2,z_3)=c_{32} = -0,3032 и corr(y_4,z_3)=c_{34}= 0,4155.

Результаты нашего когнитивного моделирования присвоений имен и смыслов z-переменным представлены в Таблице 2.

Таблица 2. Значения имен, смыслов валидных и z-переменных, коэффициентов корреляции между их парами

Весовая и смысловая характеристика валидных и измряемых z-переменных					
1	2	3	4		5
«Вес» валидной переменной	Смысл валидной переменной	Обозначение валидной переменной	Значения «весов» z-переменной, линейно входящих в валидную переменную	Номера z-переменных и x, линейно входящих в валидную переменную	Смыслы z-переменных, линейно входящих в валидную переменную
λ_1=1,75	«по правде (правильно) поступать»	y_1	corr(y_1,z_5)=c_{51} **0,5191** corr(y_1,z_3)=c_{31} **0,4481**	3,5	смысл(y_1,z_5)= «честность» смысл (y_1,z_3)= порядочность
λ_2=1,383727	«принудить к…»,	y_2	corr(y_2,z_1)=c_{21} -0,3084 corr(y_2,z_2)=c_{22} **-0,4618** corr(y_2,z_3)=c_{32} -0,3032 corr(y_2,z_4)=c_{42} **- 0,6303**	1,2,3, 4,5	смысл (y_2,z_1)= «лицо низкой социальной активности», смысл (y_2,z_2)= «низкая зарплата» смысл (y_2,z_3)= антипорядочность смысл (y_2,z_4)= «проявление деспотизма»

			corr(y_2,z_5)=c_{52} =0,4397		смысл (y_2,z_5)= *«честность»*
λ_3=1,366273	«обмануть, чтобы…»	y_3	Corr(y_3,z_1)=c_{13} = **-0,5739** Corr(y_3,z_6)=c_{63} = **0,7854**	1,6	смысл (y_3,z_1)= «лицо низкой социальной активности»,смысл (y_3,z_6)= «стремится обнануть, а не добросовестно сделать что-либо»
λ_4 =1	«страху нагнать»	y_4	corr(y_4,z_2)=c_{24} = **0,3923** corr(y_4,z_3)=c_{34} = 0,4155 corr(y_4,z_4)=c_{44} = **-0,6420** corr(y_4,z_5)=c_{54} = **- 0,4220**	2,3, 4,5	смысл (y_4,z_2)= «низкая зарплата» смысл (y_4,z_3)= антипорядочность смысл (y_4,z_4)= «проявление деспотизма» смысл (y_4,z_5)=*античестность*

Моделирование значений 4 валидных показателей индивидуального сознания

Так уровень значений 1-го валидного показателя («поступать по правде») мы назначили наибольшим, далее ранжируем уровни остальных валидных показателей в убывающем порядке: уровень(1) > уровень(2) > уровень(3) > уровень(4). Это мы применили порядковую шкалу для уровней. Для цифрового моделирования уровней и диапазона изменений в шкале отношений требуются отдельное исследование. Оно позволило бы оценить во сколько раз «правда сильнее», например, «обмана». Ограничимся выявлением и иллюстрацией изменчивости валидных показателей в системе из 6 измеряемых показателей, одномерные статистические характеристики, имена, значения которых мы выше смоделировали.

В ОМ ГК средние и дисперсии z-переменных назначаются независимо от других параметров моделируемой многомерной выборки X^0_{m6}. будем руководствоваться в пользу иллюстративных преимуществ на графике динамик значений 6 измеряемых показателей. Не будем стремиться к адекватности реальной многомерной выборки. Такой реальной выборки нет. Рисунок 2 визуализирует динамику значений 6 модельных (измеряемых z-переменных) показателей индивидуального сознания.

Наименьшим «шагом» наделим (будем считать) «шаг» валидного показателя y_1. Выберем единицу измерения шага s_1, используя аналогию с «шагом» измерения уровня образованности матерей школьников из 20 школ США - «2 класса обучения в школе». Шаг показателя «(правильно) поступать» назначим равным 2. «Шагу» валидного показателя «по правде (правильно) поступать» присвоим значение 2: s_1=2. Показателю «принудить к…», назначим «шаг» s_2 =4. Так как обман ограничен перерастанием в ложь, то «шагу» показателя «обмануть, чтобы…» присвоим субъективно значение s_3=4. Для назначения «шага» «обмануть, чтобы…» руководствуемся эмпирическим фактом распространенности приемов информационного

бизнеса типа «приманка-крючок» или иных приемов при продажах товаров, услуг или для принуждения выполнить вредные виды работ. Дискуссия по этому «шагу» побудила нас назначить значение s_4=4.

Линейное преобразование Z_{mn}=$Y_{m\ell}[C_{n\ell}]^T$ линейно не преобразует единицы измерения, а преобразует величины ℓ=4 валидных показателей, превращая их в значения n=6 z-переменных.

Значения стандартных отклонений z-переменных равны 1, а значения стандартных отклонений y-переменных-sqrt(λ_1), sqrt(λ_2), sqrt(λ_3), sqrt(λ_4).

Преобразуем значения y-переменных y_1,y_2,y_3,y_4 в значения валидных показателей с значениями стандартных отклонений, равных заданным значениям s_1,s_2,s_3,s_4. Для этого умножим элементы j–го столбца матрицы $Y_{m\ell}$ на множитель s_j /sqrt(λ_j), j=1,2,3,4. Это позволило нам смоделировать значения 4 валидных показателей, имена и смыслы которых мы задали заранее. Число модельных выборок $Y^{(t)}_{m\ell}$ равно числу декоррелированных выборок [4] $U(t)_{m6}$, t=1,…,k_t<∝. В результате получим матрицу значений валидных показателей, каждый из которых имеет дисперсию, равную s^2_j и стандартное отклонение s_j: $(1/m)[y^2_{1j}+…+ y^2_{mj}]$ (s_j/sqrt(λ_j))=s^2_j λ_j/ [sqrt(λ_j)]^2 = λ_j /λ_j s^2_j = s^2_j . Здесь символы s_1,s_2,s_3,s_4,s_j обозначали параметры y-переменных y-переменных, далее будем использовать их для обозначения параметров z-переменных.

Наши результаты по когнитивному моделированию показателей валидных и измеряемых показателей сознания индивида основаны на применении ОМ ГК, на ОСЗ 2 и 91.67% (из 100%) использовании доступной информации, в том числе: степень проявления смысла валидного показателя y_2, имеющего смысл(y_2) основана на λ_1/6=1,383726996/6=23,06% процентах доступной информации, степень проявления смысла валидного показателя y_3, имеющего смысл (y_4) основана на λ_4/6=1,3662730041317/6=22,77% процентах доступной информации. Степень

проявления смысла валидного показателя y_4, имеющего смысл (y_4) основана на $\lambda_4/6=1/6=16{,}67\%$ процентах доступной информации.

Моделирование значений 6 измеряемых показателей индивидуального сознания

Назначим значения стандартных отклонений модельным z-переменным z_j, $j=1,2,3,4,5,6$. Исходными назначенными именами являются имена валидных показателей. В соответствии с их смыслами назначим для них значения стандартных отклонений для y- переменных y_1,y_2 ,y_3,y_4,y_5,y_6. Будем опираться на содержательный смысл значения z z-переменной и содержательный смысл значения s стандартного отклонения в формуле $x^0=zs+x^{me}$ разложения значения исходного измеренного значения любого показателя. Значение числа z означает количество стандартных отклонений s, содержащихся в значении $x^0 = zs+x^{me}$, равном переменной части zs и постоянной частей x^{me}. Изменчивость (вариабельность) переменной части zs обеспечивается за счет изменчивости значений z. Постоянное число s имеет смысл шага отклонений, присущих значениям переменной части. Смысл этой фразы на простом примере поясним так: длина шага человека (s=60 сантиметров), повторенное в количестве z раз плюс постоянное значение среднего шага x^{me} ($x^{me}\approx60$ см.) равно значению некоторого фиксированного значения шага человека. При этом известно (речь идет о 3σ), что значения z

чаще всего меняются на -3 влево от нуля, на +3 вправо от нуля. Длина шага может быть дробным и со знаком минус для шага влево на оси с назначенной точкой нуль.

Значения стандартных отклонений для y-переменных y_1,y_2 ,y_3,y_4,y_5,y_6 назначим с учетом их взаимной пропорциональности значений. Например, если шаг человека в 6 раз шире шага курицы, шаг курицы в 3,3 раза больше шага воробья, то нам надо выбрать единый н масштаб для значений s_1, s_2, s_3, например, $s_1=1$, $s_2=3.3$, $s_3=6*(3.3)$. Длина одного «шага» отличается от длины другого «шага» в соседних значениях s_1,s_2, s_3, s_4, s_5, s_6.

Значения средних арифметических для каждого измеряемого показателя назначим с учетом только превышения значения одного над значением другого.

Мы не стремимся получить цифровую адекватность для моделируемых переменных. Значение среднего арифметического 1-мерной переменной не влияет на гистограммную адекватность к другой, например, реальной 1-мерной переменной [10-12]. Пока не существует реальной 1-мерной переменной.

Этих процентов информации для нашей модели достаточно для идентификации имен и смыслов 6 z-переменных z_1,z_2,z_3,z_4,z_5,z_6. Каждый валидный показатель с номером j пропорционально величинам компонент c_{kj}, $k=1,\dots,6$, делит свой процент информации на 6 измеряемых показателей: $Z_{m6} =Y_{m4}[C^+_1]^T$.

Таблица 3. Значения 6 z-переменных индивидуального сознания

n^0	values of the z-variables					
	z_1	z_2	z_3	z_4	z_5	z_6
1	22,44	29,785	113,5753	-7,64	104,23	11,0474
2	23,62	31,458	115,5414	-11,542	103,95	6,3903
3	30,42	34,33	116,3464	-3,6257	103,36	4,7648
4	31,19	36,08	117,0443	-0,16436	101,88	6,7243
5	25,33	35,608	117,8619	-6,6026	101,42	9,15747
6	33,34	39,382	120,21251	-3,8861	100,76	1,0895
7	32,65	39,352	119,49337	0,44218	100,57	6,2749
8	31,36	38,536	118,5066	2,0936	99,992	8,65652
9	31,59	39,071	119,23204	0,34308	99,976	6,9991
10	26,56	38,448	119,29355	-2,2254	99,734	11,9992
11	31,19	40,477	120,14715	1,1362	98,729	8,23333
12	31,38	40,958	120,03869	3,9332	98,286	10,6038
13	26,01	39,575	119,57211	0,51629	97,82	14,3849
14	31,48	43,382	122,4635	1,1905	97,716	9,21871
15	32,68	43,07	121,6193	4,0495	97,227	9,19955

16	30,21	41,999	120,74405	4,1976	96,917	12,1399
17	30,19	44,175	122,9846	1,1169	96,122	10,1264
18	25,67	43,108	122,5257	-0,80348	95,766	14,3792
19	36,89	46,823	123,8146	7,7421	95,548	7,2113
20	35,8	54,382	129,1831	9,929	89,988	11,3996

Мы знаем имена –переменных, умеем моделировать согласно модели ОСЗ 2 и ОМ ГК значения валидных показателей индивидуального сознания и значения z-переменных. Мы задали эмпирические значения стандартным отклонениям значения валидным показателям, задали эмпирические значения стандартным отклонениям и значения средних арифметических каждому из z-переменных. Коэффициент корреляции Пирсона r_{ij} служит коэффициентом линейной связи между к-ими значениями i-ой z- переменной и j-ой z-переменной: $z_{ki}=r_{ij}\times z_{kj}$. k=1,…,20, i=1,…,6, j=1,…,6. Эта формула позволяет вычислить значения i-ой z-переменной с неизвестным смыслом через значения j-ой z-переменной с известным смыслом, что облегчает процесс присваивания смыслов всем n z- переменным.

В таблице 3 показано отсутствие равенства числу 1 значений стандартных отклонений у модельных z-переменной z_j, j∈{1,2,3,4,5,6}. Это не соответствует соотношениям ОМ ГК. Найдем значения постоянных δ_j для каждой z-переменной, позволяющие значениям стандартных отклонений модельных z-переменных z_j, стать равной 1. Из формулы факторизации исходного измеренного значения $x^0=zs+x^{me}$ введем значение постоянной δ: $(z+\delta)s+x^{me}=x^0$. Суммирование по индексу =1,…, номера строки матриц и деление полученной суммы на дает нам равенство вида $(1/m)(z^2_1+…+z^2_m)s +(1/m)(\delta_1+…+\delta_m)s +x^{me}=x^0$. Так как $(1/m)(+z^2_1+…+z^2_m)=1$, а также известно значение $\delta^{me}=(1/m)(\delta_1+…+\delta_m)s$, то имеем равенство $1s+\delta^{me}s=x^0$. Отсюда получаем постоянную $(\delta^{me} +1)s=x^0$, на которую нужно умножить каждое значение нашей z-переменной, у которой не было выполнено условие стандартизованности. В данном примере мы не использовали этот прием, ибо нам не нужна цифровая адекватность, нас интересуют взаимные тренды коррелированных показателей индивидуального сознания.

Но учет отсутствия значений двух (n-ℓ=6-4=2) собственных векторов из подматрицы C^+_2 матрицы $C^+_{nn}=[C^+_1 C^+_2]$, собственных векторов позволяет точно оценить исходные значения измеряемого показателя x^0 с номером j, j∈{1,2,3,4,5,6}. Отсутствие двух собственных векторов привело к нарушению условия нормированности z-переменной z_j, j=1,2,3,4,5,6, но неучет «невязки» и наличие известных значений средних и стандартных отклонений позволил нам оценить тренды j-ой x^0-переменной с номером j_j, j∈{1,2,3,4,5,6}.

Анализ трендов изменения измеряемых показателей индивидуального сознания

Мы не знаем названий единиц измерения валидных показателей индивидуального сознания, единиц измерения измеряемых показателей, получаемых линейным преобразованием значений z-переменных. Необходимо исследование. В данной работе целью нашего моделирования является выявление трендов изменения измеряемых показателей, соответствующих нашим моделируемым z-переменным.

После моделирования многомерной выборки значений измеряемых показателей сделаем анализ ее значений в соответствии с их смыслами.

Рассмотрим тенденции роста и падения значений показателей. Нам важно знать какой тренд наблюдается у показателей, если, например, в мы в наших данных наблюдаем «падение честности» у, например, 20 индивидов. Какая тенденция – роста или падения, мы видим в наших данных? Рисунок 4 дает некоторый ответ на этот вопрос. Ограничимся пока только ответом на этот вопрос. На рисунке 5 видна «падающая» тенденция у значений показателя «честность». Мы реально наблюдаем эту тенденцию. Упорячив элементы столбца №5 в порядке убывания мы переставили столбцы матрицы X0 (Таблица 5). От перестановки местами строк матрицы X0 не меняются использовавшиеся выше матрицы .

Матрицы C_{66} и Λ_{66} сильно повлияли на наши результаты. Влияют они и на рассматриваемые тренды.
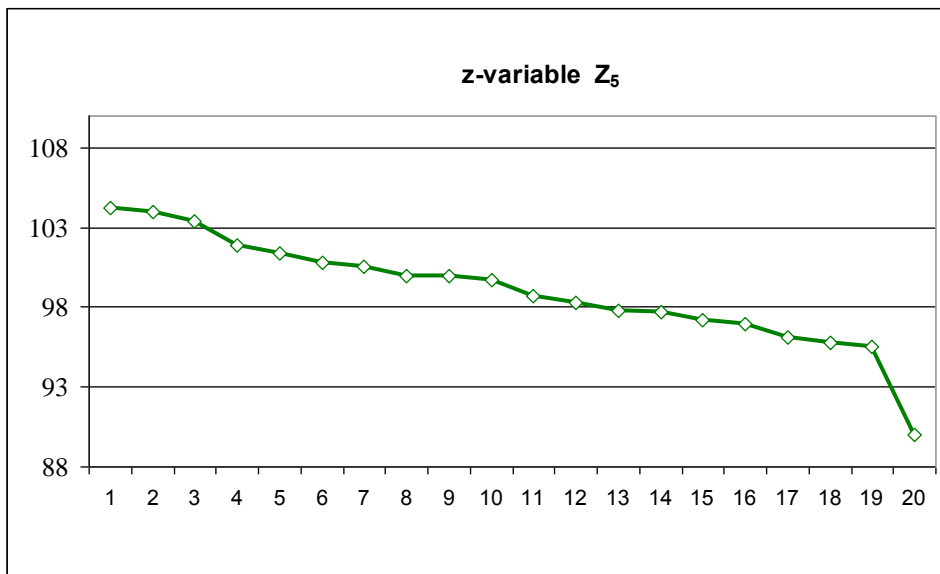
Рисунок 1 Убывающая динамика значений валидного показателя «честность»

Мы убедились в наличии следующих эффектов при анализе результатов прведенных расчетов:

- необходимо в составе валидных смыслов рассматривать и их смысловые градации, что приведет к необходимости увеличения значений n, ℓ, s_1, s_2, s_3, s_4, s_5, s_6;

- назначение уровеня значения 1-го валидного показателя («поступать по правде») наибольшим и сильно превышающим уровней других валидных показателей негативных смыслов модельно демонстрирует стабильность и отсутствие резких изменений в динамиках других валидных показателей с негативными смыслами индивидуального сознания;

- совокупность рассматриваемых в данном примере выделенных элементов собственных векторов C^+_{66} являтся предельным, при котором число ℓ=4 доминирующих элементов (по критерию Кайзера-Дикмана) нового спектра Λ^+_{66} (собственных чисел) остается прежним.

- тренды (тенденции падений или роста) показателей индивидуального сознания соответствуют реальным для ситуации, когда доминирует по «весу» «по правде (правильно) поступать».

Признаками необходимости смены критерия выделения доминирующих собственных чисел служат трудности когнитивно правильного придания смыслов для z-переменной (Таблица 2). Новый спектр Λ^+_{66} образует пару с новой матрицей C^+_{66}, образующей пару (C^+_{66}, Λ^+_{66}). При решении оптимизационной задачи в модели ОСЗ 2 происходит уменьшение доли информации по измерителю (λ^+_1)/6. Содержательно это означает уменьшение доли валидного показателя y_1. Что нежелательно, ибо меняет отношение «добро»:«зло».

Доминирование значения другого валидного показателя с негативным смыслом индивидуального сознания, например «страх», присуще для другой ситуации для индивида. Возможно – это ситуация чрезвычайного положения. Требуются исследования подобных ситуаций.
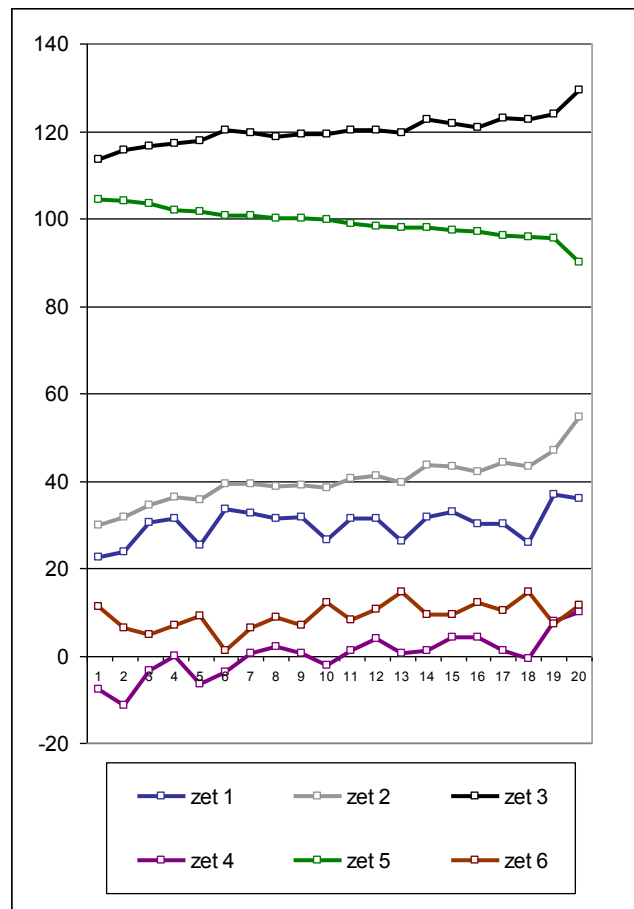
Рисунок 1 Взаимные динамики 20 значений 6 измеряемы показателей индивидуального поведения

Заключение

Наша цель состояла в том, чтобы показать возможности применения способа описания измерения». Когнитивный анализ и когнитивное моделирование демонстрировали эффективность применения Обратной Модели Главных Компонент [11]. Иллюстратиный пример и дискуссия по приданию названий 6 коррелированным показателям индивидуального сознания при заданных 4 скрытых факторах индивидуального восприятия служат обоснованием дальнейших исследований по моделированию значений и выбору единиц измерения n коррелированным показателям индивидуального сознания, оценкам их средних и дисперсий.

Модель цифровизации показателей индивидуального сознания [1] повысила свою восприимчивость по «весовому» критерию к значениям выделенных компонент собственных векторов. Мы подошли вплотную к изменению значения ℓ доминирующих элементов исходного спектра, определяемого по критерию Кайзера-Дикмана: число ℓ доминирующих элементов

спектра равно максимальному номеру ℓ такому, что $\lambda_\ell > 1$, $\ell \in \{1,2,3,4,5,6\}$.

При этом практические решения по принятию предыдущего значения и последующего предыдущего значения и последующего предыдущего значения и подвергнуты всестороннему анализу. Чтобы осмыслить изучаемые в этой модели процессы необходимо рассмотреть вопросы при переходе от безразмерных значений z-переменных к значениям x0–переменных (измеренных значений показателей) с размерностями. Здесь предстоит иметь дело с значениями средних арифметических n зависимых переменных xср.

Мы убедились в наличии следующих эффектов при анализе результатов приведенных расчетов:

1) «густота» расположений выделенных компонент собственных векторов влияет (уменьшает) на значение 1-ое собственного числа λ_1;

2) чем больше имеем выделенных собственных векторов, тем больше увеличивается число ℓ доминирующих элементов спектра, удовлетворяя другому критерию Джоллиффа [5]: число ℓ доминирующих элементов спектра равно максимальному номеру ℓ такому, что $\lambda_\ell > sqrt(3)/2$, $\ell \in \{1,2,3,4,5,6\}$;

3) при $\ell < n$ проявляется погрешность модели ОСЗ 2, она растет с повышением величины $n-\ell$;

4) когнитивная задача придания имен измеряемым показателям усложняется с повышением величины разности $n-\ell$;

5) необходимо в составе валидных смыслов рассматривать и их смысловые градации, что приведет к необходимости увеличения значений n и ℓ.

$s_1, s_2, s_3, s_4, s_5, s_6$;

6) назначение уровеня значения 1-го валидного показателя («поступать по правде») наибольшим и сильно превышающим уровней других валидных показателей негативных смыслов модельно демонстрирует стабильность и отсутствие резких изменений в динамиках других валидных показателей с негативными смыслами индивидуального сознания;

7) совокупность рассматриваемых в данном примере выделенных элементов собственных векторов C^+_{66} являются предельным, при котором число $\ell=4$ доминирующих элементов (по критерию Кайзера-Дикмана) нового спектра Λ^+_{66} (собственных чисел) остается прежним.

В новых явлений, объектов, проявлений их свойств необходимо и обнаружение знаний «на личностном, индивидуальном уровне» [1]. Мы надеемся, что данное направление исследований будет способствовать преобразованию индивидуального сознания к открытости и восприимчивости. «Открытость и восприимчивость к лучшим достижениям, а не заведомое отталкивание всего «не своего» – вот залог успеха и один из показателей открытого сознания» [1].

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QR – Issue

QR – Article

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SECTION 29. Literature. Folklore. Translation Studies.

TO THE QUESTION ABOUT THE PROBLEM OF "WRITER, AUTHOR, AUTHOR-WRITER" IN THE NOVEL BY ALEXANDER BECK "VOLOKOLAMSK HIGHWAY»

Abstract: This article discusses the concept of "writer-author", "author-writer". The problem of definition of these literary terms. As an object of research, the analysis of the Roman "Volokolamsk highway".
Key words: author, writer, novel, history of literature.
Language: Russian
Citation: Otesh, Z. A. (2018). To the question about the problem of "writer, author, author-writer" in the novel by Alexander Beck "Volokolamsk highway». ISJ Theoretical & Applied Science, 11 (67), 371-373.
Soi: http://s-o-i.org/1.1/TAS-11-67-65   Doi: crossref https://dx.doi.org/10.15863/TAS.2018.11.67.65

К ВОПРОСУ О ПРОБЛЕМЕ «ПИСАТЕЛЬ-АВТОР», «АВТОР-ПИСАТЕЛЬ» В РОМАНЕ А.БЕКА «ВОЛОКОЛАМСКОЕ ШОССЕ»

Аннотация: В данной статье рассматривается концепция «писатель-автор», «автор-писатель». Проблема определения этих литературных терминов. В качестве объекта исследования, анализа избран роман А.Бека «Волоколамское шоссе».
Ключевые слова: автор, писатель, роман, история литературы.

Introduction

На протяжении десятка с лишним лет, с тех пор как в средствах массовой информации нашла освещение тема о творческом наследии военного писателя и Героя Советского Союза Бауыржана Момышулы, повсеместно началась длинная и кропотливая работа изучения неординарной личности, покорившая весь мир и прославившая казахский народ породившая столь талантливого человека.

Мы уже знаем, что все его произведения это не плод его воображения или фантазии, а записки весьма авторитетного и опытного военного ученого, чьи учения проходили вживую и в суровой реальности, т.е. в годы Великой Отечественной войны. Это дневники офицера, представляющие собой военно-просветительские труды, которые широко стали известны за пределами нашей Родины. И на основе которых в дальнейшем полковник Б.Момышулы стал известен широкой публике как писатель, который стал освещать подвиги своих товарищей по

оружию. Своими произведениями он воздвиг нерушимый и духовный памятник всем солдатам и героям павших за Родину и написавшим историю своей Родины кровью. Что неоднократно подчеркивал в своих трудах и автор [1-5]: «Многие из моих товарищей погибли в боях, многие получили увечья, стали инвалидами войны. Они отдали свою молодость и здоровье Родине. Это истинные герои, поднявшиеся в трудный час на защиту Отечества. И я считаю своим гражданским долгом рассказать об их подвигах».

Materials and Methods

Гвардии полковник Б.Момышулы как офицер и выдающийся военный теоретик не просто сам писатель и осветитель тех реальных событий, чьим участником является, но и сам того не подозревая стал главным героем во всех художественных произведениях о себе. В частности этим художественным произведением можно назвать изначально задуманная как

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повесть, но по прошествии нескольких лет проявившая себя как роман, произведение А.Бека «Волоколамское шоссе». Сам того не подозревая Б.Момышулы стал тем самым легендарным лейтенантом и основным литературным образом, чье имя облетело весь Советский Союз да и не только, поражая своей уникальностью. А уникальность состояла в том, что сам герой от начала и до конца рассказчик всей этой истории, да и еще к тому же участник всех этих военных событий.

Исходя из этого, мы видим, что основной груз написания романа все-таки отводился именно герою произведения, так как, являясь его рассказчиком, он так же следил за тем, чтобы военно-теоретическая и психологическая часть романа не пострадала, а оставалась в том неизменном виде, дабы не превращать ложь в истину.

После выхода в свет первых глав романа, естественно велись обсуждения. И не один раз. И если читатель, присмотревшись заметить, что при обсуждении в основном все права романа отстаивал сам герой произведения, то задумается о роли автора и писателя. И даже увидит, что были и те, кто говорил, что автором является именно Б.Момышулы. Даже А.Бек в предисловии к «Волоколамскому шоссе» как бы указывая на этот факт, отметил: «В этой книге я всего лишь добросовестный и прилежный писец» [6].

И все же при всем этом явном и видимым фактом Б.Момышулы оставался непрекословным и не присваивал себе авторство, а наоборот всегда отмечал что: «Бек является автором книги, а я, мои бумаги, моя память, мои мысли – материалами книги» [7].

И вполне справедливо замечает, что оба несут ответственность за достоверность фактов, являясь «автором-материалом» и «автором-обработчиком».

И так кто же является автором, а кто писателем художественного произведения? Основываясь на логическое мышление, мы скажем, что писатель – это реальный человек, который живёт здесь и сейчас. Он продумывает все детали будущего произведения от начала и до ее логического завершения. Система героев и будущих персонажей – это плод его работы над продумыванием каждого штриха.

В свою очередь автор – это повествователь, т.е., рассказчик. И возможно это персонаж художественного мира. Автор также является участником отведенных ему событий или свидетелем той или иной ситуации жизни героев.

Но вместе с этим возникает вопрос тогда почему бы повествователю, т.е. рассказчику и не быть писателем, если все действия и акты в литературном плане ведутся от него? Ведь все «литературные приемы» преподносит он?

Если бы между Б.Момышулы и А.Беком не существовало этого устного договора, то в действительности и автором и писателем романа «Волоколамского шоссе» являлся бы сам Момышулы. И тем запутаннее стало когда «прилежного писца» мир узнал как писателя данного произведения. А все, потому что великодушие и моральный облик герой ставит превыше всего, уступая все права и лавры известности другому не менее талантливому человеку.

Но наряду с этим весьма не лестные отзывы о Б.Момышулы нашли отражение и выглядят таким образом: «Говорят, что книга выставлялась на Сталинскую премию, но оказалось, что якобы «Волоколамское шоссе» — книга, написанная с позиций культа личности. Наконец-то мы знаем, кто утверждал у нас культ личности: это был, оказывается, А. Бек!.. Как писатель Бек имел много неприятностей с «Волоколамским шоссе». Момыш-Улы, человек, которого Бек прославил на весь мир, стал его злейшим врагом. Он считал себя соавтором «Волоколамского шоссе». Он измучил Бека экспертизами и тому подобными вещами, отнимавшими у писателя время и рвавшими ему душу». (И далее дается такое толкование: Бауржан Момыш-Улы (1910-1982) – казахский писатель, полковник, военный педагог. Автор книг «За нами Москва. Записки офицера» (1959), «Фронтовые встречи» (1962) и др. Являясь реальным прототипом художественного обобщенного образа, от лица которого ведется повествование в «Волоколамском шоссе», ревновал к литературному успеху А.Бека, недоумевая, отчего собственные его тексты никакого резонанса не имеют) [8].

Не вполне справедливое и точное замечание. Если бы все те произведения (а таких было и несколько), которые писались под личную диктовку Момышулы, присваивались им самим, то напрашивается вполне закономерный вопрос ради чего все эти старания и какие бы цели преследовались этим поступком. По сути А.Беку выпала честь остаться в истории литературы как одному из немногих писателей, имевшему такую уникальную возможность общения со своим рассказчиком, основным героем своего романа.

Однако возьму на себя смелость заметить, что человек, высказавший эту мысль, явно не читал «Психологию войны», стенограммы и обсуждения по поводу книги Бека. И даже могу заверить автора этих слов, о том, что до сих пор в литературных кругах есть два мнения, кто кого прославил, писатель героя или герой писателя, что вполне закономерно. И это достижение, я думаю, не делимо. Ведь изначально целью книги являлось не только боевой подвиг под Москвой в октябре 1941 года, но и поднятие боевого духа у

всех сражающихся за Родину солдат, восприятие военного настроя, правильно влияющего на исход сражения. Потому что «боец – живой человек». И нет здесь никакого культа личности, если культом личности здесь подразумевается личность Б.Момышулы. Но, тем не менее, целью статьи является не высказывание отдельных личностей, а именно литературная критика, подразумевающая художественный и созидательный мир произведения и ее литературную мощь.

Однако наряду с этим тот же самый автор заметил: «Я читал «Волоколамское шоссе» на фронте. Конечно, были и другие книги. В других книгах было всё – героизм наших солдат, великие жертвы, которые нес народ, беспримерный трудовой подвиг людей нашей страны, но в «Волоколамском шоссе» мы впервые увидели воина-победителя и почувствовали себя тоже победителями. Это великая книга, обошедшая весь мир, написанная солдатом, рядовым солдатом в разгар войны» [8].

Conclusion

С этим не согласится нельзя. Это действительно факт. Хотя по задумке главного героя, т.е. самого рассказчика повесть изначально подразумевалась как военно-просветительский труд для военнослужащих и армии, но не в коем случае как роман. Так как излагает хронологию боевых действий и тактику, а также ситуацию военного времени. Но незаметно для себя Б.Момышулы и А.Бек создали произведение, которое в военной прозе мировой литературы заняло не последнее место.

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USE OF THE PRODUCTS, RECEIVED IN PROCESS PYROLYSIS OF SHALL OILS OF AZERBAIJAN DEPOSITE "BOLSHOY SIYAKI" AND "MALIY SIYAKI'

Abstract: The given research devotes to conducting of catalytic pyrolysis of tar, reseived by thermal pyrolysis of shale Bolshoy Siyaki and Maliy Siyaki. Analysis of catalytic pyrolysis products have been made and its use was offered.
Key words: catalytic pyrolysis, shale oil, pyrolys qas, shale tar of pirolysis.
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ИСПОЛЬЗОВАНИЕ ПРОДУКТОВ, ПОЛУЧЕННЫХ В ПРОЦЕССЕ ПИРОЛИЗА ГОРЮЧИХ СЛАНЦЕВ АЗЕРБАЙДЖАНА МЕСТОРОЖДЕНИЯ БОЛЬШОЙ СИЯКИ И МАЛЫЙ СИЯКИ

Аннотация: Данные исследования посвящены проведению каталитического пиролиза смолы, полученной при термическом пиролизе сланцев Большой Сияки и Малый Сияки. Проведен анализ продуктов каталитического пиролиза и предложено их использование.
Ключевые слова: каталитический пиролиз, горючий сланец, пиролизный газ, смола пиролиза, тиофеновые соединения, бензин, толуол, ксилол, синтетическое топливо.

Introduction

Постоянный рост мирового энергопотребления, достигшего почти 12 миллиардов тонн условного топлива, сопровождается быстрым истощением основных энергетических ресурсов [1, с. 164]. Горючие сланцы являются одним из перспективных видов органического и технологического сырья, способных заменить нефтепродукты и газ [2,с.20].

Горючие сланцы относятся к альтернативным видам сырья и отличаются от каменного угля и битума. При термическом разложении они образуют значительные количества жидких и газообразных продуктов, из которых можно получить различные виды синтетических топлив и ценные органические продукты. В горючих сланцах также содержится значительное количество минеральных примесей, применение которых имеет важное практическое значение. Несмотря на большое количество открытых запасов горючих сланцев (более 0,5 млрд. тонн), они не исследованы и в настоящее время не используются [3,с.85]. Нами исследовались сланцы Гобустанского месторождения Большой Сияки и Малый Сияки [4 с.29, 5, с.64]. В предыдущей статье [6,с.39] мы дали анализы этих сланцев и результаты скоростного пиролиза.

Clarivate
Analytics indexed

Materials and Methods

В данной работе мы описываем использование продуктов, полученных при пиролизе этих сланцев. Полученная при пиролизе сланцев смола была подвергнута разгонке. Данные представлены в табл. 1.

Таблица 1. Фракционный состав смол.

Температура, ºС	Большой Сияки % объемные	Малый Сияки % объемные
Н.к-90	2,2	1,8
90-120	0,7	0,8
120-150	3,1	2,9
150-170	6,1	6,0
170-215	10,0	9,7
215-230	1,4	1,6
230-250	4,1	3,8
250-280	6,1	6,5
280-300	4,2	4,5
300-330	14,2	15,3
Выше 330	47,9	47,1

Из данных табл.1 следует, что большую часть смол составляют высокомолекулярные соединения, выкипающие при температуре выше 330ºС.

Нами был проведен каталитический пиролиз смолы пиролиза сланца.

Процесс проводился на установке, представленной на рисунке.

Процесс осуществляется следующим образом. Сырье в реактор поступает самотеком из мерной бюретки. Продукты реакции из реактора отводятся через водяной холодильник. Жидкие продукты собираются в приемники 13 и 14, а газообразные продукты поступают в абсорбер 15, где абсорбируется жидкая часть углеводородного газа и улавливаются несконденсированные углеводороды пиробензина.

Газ после абсорбера проходит через газовый счетчик. Во время проведения процесса газ отбирается в газовый пикнометр для определения плотности. Отобранные газообразные продукты подвергались анализу на хроматографе Grome 5.

Индивидуальный состав смолы пиролиза также определялся на хроматографе.

В качестве катализатора нами использовалась механическая смесь, состоящая из природного морденита Нахичеванского месторождения и промышленного катализатора Ni на кизельгуре.

Морденит Нахичеванского месторождения имеет следующий состав, % масс.: SiO_2 – 72,08; Al_2O_3 – 12,18; Fe_2O_3 – 0,95; CaO – 0,86; SrO – 0,12; K_2O – 2,09; Na_2O – 1,04; H_2O – 10,68 и промышленного катализатора Ni на кизельгуре. Опыты проводились при температурах 550, 600 и 650ºС при атмосферном давлении.

Материальные балансы каталитического пиролиза сланцевой смолы из сланцев Большой и Малый Сияки представлены в таблицах 2 и 3. За оптимальную температуру нами выбрана температура 600ºС.

Состав газа, полученного при каталитическом пиролизе дан в табл. 4, а состав легкой фракции пиролиза, выкипающей в пределах н.к. – 215ºС показан в таблице 5.

Таблица 2. Материальный баланс пиролиза сланцевой смолы из сланца Большой Сияки.

Компоненты	Температура пиролиза, ºС		
	550	600	650
1.Газ	63,5	67,4	70,8
2.Легкое масло	24,5	23,2	21,4
3. Смола	6,2	5,4	4,3
4. Кокс + потери	5,8	4,0	3,5
Итого	100	100	100

Таблица 3.Материальный баланс пиролиза сланцевой смолы из сланца Малый Сияки.

	Температура пиролиза, ºС		
Компоненты	550	600	650
1.Газ	63,0	66,8	69,5
2.Легкое масло	25,4	24,8	22,6
3. Смола	6,6	5,4	4,8
4. Кокс + потери	5,0	3,0	3,1
Итого	100	100	100

Таблица 4. Выход и состав пиролизного газа при температуре 600 ºС.

Показатели	Большой Сияки	Малый Сияки
Выход газа	67,4	66,8
Состав газа,%об.		
H_2	14,17	14,28
CO	5,6	19,3
CH_4	20,1	13,4
CO_2	0,4	4,92
C_nH_{2n}	25,03	13,5
H_2S	2,1	1,4
Теплотасгорания кДж/м³	35195	28981
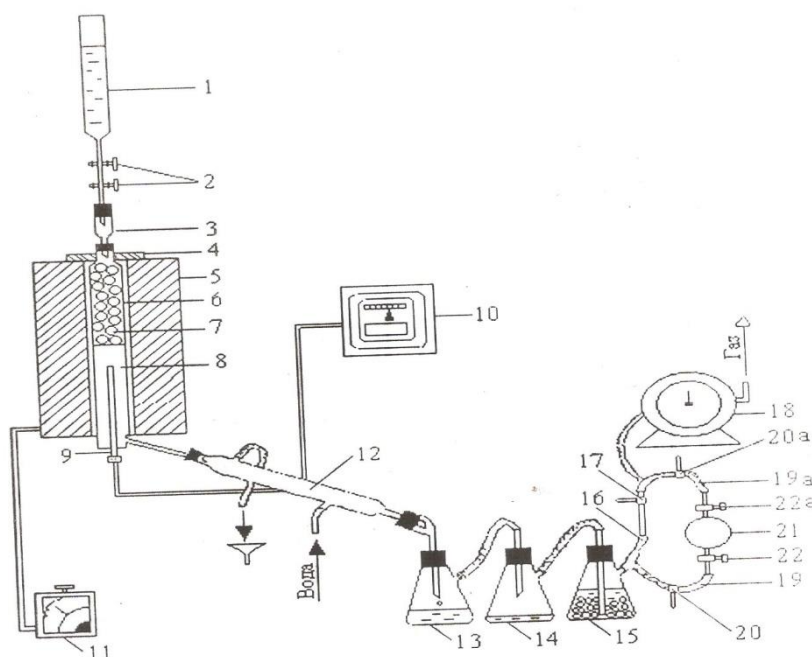
Рис. 1. Схема лабораторной установки каталитического пиролиза.
1 – сырьевая бюретка; 2 – краники; 3 – аллонж; 4 – накладка асбестовая; 5 – электрическая печь; 6 – реактор; 7 – насадка; 8 – реакционная зона; 9 – термопара; 10 – потенциометр; 11 – терморегулятор; 12 – холодильник; 13 – колба приемная; 14 – колба промежуточная; 15 – абсорбер; 16 – отвод газового счетчика; 17 – зажим средний; 18 – газовый счетчик; 19 – байпас входа газа; 19 а - байпас выхода газа;20 – зажим крайний; 21 – пикнометр газовый; 22 – кран пикнометра; 22 а – кран пикнометра.

Таблица 5. Химический состав легкокипящих фракций н.к - 215ºС пиролиза сланцевых смол.

Компонент	Большой Сияки	Малый Сияки
Головная фракция	43,8	21,0
Бензол	11,2	1,9
Тиофен	5,7	1,0
Толуол	2,9	3,9
Метилтиофен	16,2	20,2
Этилбензол и ксилолы	4,9	17,3
Другие компоненты	15,3	34,7

Как видно из данных табл. 5 в легких фракциях смолы содержатся значительные количества тиофеновых соединений, что делает целесообразным их использование в качестве сырья для получения тиофеноароматического концентрата по способу, технологически оформленному в промышленном масштабе [7, с.6].

Фракция н.к. – 215ºС была подвергнута разгонке и определен состав фракций. Все данные представлены в табл. 6 и 7.

Таблица 6. Состав фракций сланцевого бензина, полученного при пиролизе.

$T_{кип}$, ºС	Содержание, масс.%						
	Головная фракция	Бензол	Тиофен	Толуол	2-метил тиофен	3-метил тиофен	Высоко-кипящие компоненты
35-205	18,5	5,86	7,64	6,7	10,2	1,04	50,04
35-79	73,15	15,2	11,6	-	-	-	0,04
79-105	43,1	24,0	19,6	8,1	4,9	-	0,3
106-119	0,2	1,76	18,1	26,3	49,3	2,8	1,6
119-133	2,0	-	-	9,6	5,8	4,6	78,0

Таблица 7. Четкая ректификация сланцевого бензина, полученного при пиролизе.

Целевые фракции	$T_{кип}$, ºС	Выход фракции % от загрузки
Фракция алканов и моноциклоалканов	35-79	18
Бензольная фракция	79-105	11,5
Толуольная фракция	106-119	18
Ксилольная фракция	119-133	9,95
Кубовый остаток	>133	42,56

Conclusion

Как видно из приведенных данных, в легкой смоле пиролиза содержатся значительные количества ароматических углеводородов и тиофеновых компонентов. Производство тиофена из горючих сланцев является экономически выгодным процессом [8, с.23].

Таким образом, смола была подвергнута каталитическому пиролизу при 600ºС.

Выделенный газ содержит значительные количества сернистых соединений. Легкая смола каталитического пиролиза (н.к. – 215ºС) содержит значительные количества бензола, толуола и ксилолов, которые могут быть выделены и использованы в нефтехимическом синтезе, а также тиофеновые соединения, которые на сегодняшний день имеют большое применение.

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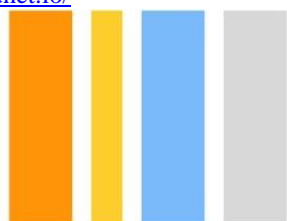
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