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Muhammad Ayub
Dr., Assistant Professor
Gastroenterology DHQ Teaching Hospital Gujranwala
Medical College Gujranwala
mnaich@hotmail.com

Shehryar Noor
Dr., consultant general surgeon in Khyber
Teaching Hospital Peshawar, Pakistan.
shehryar.md@gmail.com

Kanwal Nasir
Dr., WMO in DHQ Nankana Sahib, Pakistan.
kanwallnasir43@gmail.com

SECTION 20. Medicine.

ASSOCIATION OF H PYLORI INFECTION WITH IRON DEFFICIENCY ANEMIA AMONG OLDER PATIENTS

Abstract: Objective: Purpose of conducting this study was to determine association of h pylori infection and anemia in old age patients.

Design & Setting: This is a cross sectional study carried out in DHQ Teaching Hospital Gujranwala Medical College Gujranwala

Duration: Study was started in Febraury 2018 and completed in June 2018 comprising on 5 months duration.

Materials and Methods: All cases presenting with signs and symptoms of acid peptic disease in outpatient-door were evaluated for H-Pylori infection. A performa was designed in which all related question were mentioned like age, signs and symptoms of H-pylori infection and peptic ulcer disease and clinical evident anemia important points of history, clinical examination and investigations were documented in it. An inclusion criteria was defined according to which only those cases were included in the study having H pylori infection diagnosed on blood tests, urea breath test or stool culture and having no other chronic disease and having age above 30 years. All those cases with age below 30 years or having any other associated disease were not included in this study. Two blood samples of each patient were taken in two viles one sample for detecting H Pylori antibodies and second sample for determining serum ferritin level on ELISA . These samples were sent for tests to the laboratory of study institution. Obtained results were documented and analyzed on SPSS software version 2014.

Results: Out of 365 cases of acid peptic disease reported in OPD of study institution in duration of 5 months, only 86 cases were having H pylori infection diagnosed by various tests and these cases were selected for study. These cases belonged to male and female both populations having age above 30 years. There were 46 male and 40 female cases in study group. Out of 86 cases 53 were diagnosed with peptic ulcer disease including 28 male and 25 female cases. Male patients were having age range of 35-75 years with mean age of 48.7 years and female patients with age range of 32-66 years with mean age of 41.3 years. Ferritin level between ranges of 15-19 ng/ml was present in 5 male cases and 10-14 ng/ml in 9 male cases. While 6 male and 15 female cases were having ferritin level between 5-9 ng/ml. One male case and 8 female cases were having ferritin level below 5 ng/ml. Among 86 cases 44 cases had iron deficiency anemia and out of them 21 were male and 23 were female.

Conclusion: Helicobacter Pylori causes deficiency of iron in the body and leading to iron deficiency nemia. It is associated usually with infection of prolong duration.

Key words: Helicobacter infection, iron deficiency anemia, Anemia in older patients.

Language: English

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INTRODUCTION

Helicobacter pylori is also known as Campylobacter pylori is a gram negative microaerophilic bacterium living in gastrointestinal system and mostly infects stomach and duodenum. It is transmitted via feco oral route.¹ People having this infection usually present with upper abdominal pain,

chest burn, indigestion, nausea, loss of appetite, bloating and weight loss. Many people are not symptomatic while having this infection and present late to doctor when signs and symptoms start appearing.² This infection can be diagnosed by various tests such as urea breath test, stool culture, ELISA for h pylori and endoscopic biopsy for



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histopathology. Urea breath test is a very accurate method of diagnosing infection. H pylori causes gastritis and patient complains of pain in stomach after taking meal. This infection can be treated by conservative management using antibiotics and antacids.³ Usually triple regimen of clarithromycin 500 mg bid, amoxicillin 1g bid and omeprazole bid. There are other regimens as well. This treatment is very effective in eradicating infection. H pylori causes iron deficiency in the patients leading to anemia. Such cases are pale and lethargic. Their iron store of body are depleted which can be measured by serum ferritin level.⁴ In this study patients with h pylori infection were evaluated for iron deficiency anemia. In this study both male and female cases were included having age above 30 years. It was seen that anemia was most likely to occur in prolonged infection and almost equally involving both male and female patients.^{5,6} Unhygienic eating habits and life style increases risk of its infection. Many studies have shown that this infection is more common in underdeveloped and developing countries while in well developed countries its prevalence is low. When h pylori infection occurs in a pregnant woman it may cause severe anemia as shown by a study of Weyermann conducted on pregnant ladies with h pylori infection reported low hemoglobin level at the start of gestational period which became severe further latter on. Due to iron deficiency anemia performance of patient is disturbed.^{7,8} It causes immunodeficiency and also makes pregnancy difficult to be completed successfully. This infection causes ulcer of stomach usually in lesser curvature and duodenal ulcer in first or second part of duodenum mostly. People with peptic ulcer are usually obese. In iron deficiency anemia oral or intravenous iron replacement was successful and increases hemoglobin level and reducing anemic symptoms but when treatment is stopped anemia occurs again so definitive treatment is to eradicate h pylori infection in the patient.

Materials and Methods

This is a cross sectional study conducted in a teaching hospital. This study was completed in duration of five months. All cases presenting with signs and symptoms of acid peptic disease in outpatient-door were evaluated for H-Pylori infection. Blood samples for test were drawn from venous blood and stored in a glass vile. Serum was obtained from the sample and tests were performed. A performa was designed in which all related question were mentioned like age, signs and symptoms of H-pylori infection and peptic ulcer disease and clinical evident anemia important points

of history, clinical examination and investigations were documented in it. An inclusion criteria was defined according to which only those cases were included in the study having H pylori infection diagnosed on blood tests, urea breath test or stool culture and having no other chronic disease and having age above 30 years. All those cases with age below 30 years or having any other associated disease were not included in this study. . People having this infection usually present with upper abdominal pain, chest burn, indigestion, nausea, loss of appetite, bloating and weight loss. Many people are not symptomatic while having this infection and present late to doctor when signs and symptoms start appearing. This infection can be diagnosed by various tests such as urea breath test, stool culture, ELISA for h pylori and endoscopic biopsy for histopathology. Two blood samples of each patient were taken in two viles one sample for detecting H Pylori antibodies and second sample for determining serum ferritin level on ELISA. These samples were sent for tests to the laboratory of study institution. Obtained results were documented and analyzed on SPSS software version 2014. Ferritin level was detected in blood by ELISA which is an investigation of choice for it. Normal range of ferritin level in the body is 10-120 ng/ml and 20-250 ng/ml in males and females respectively according to BioCheck scale.

Results

Study subjects were selected in outpatient door of study hospital. Out of 365 cases of acid peptic disease reported in OPD of study institution in duration of 5 months, only 86 cases were having H pylori infection diagnosed on various tests and these cases were selected for study. These cases belonged to male and female both populations having age above 30 years. There were 46(53.5%) male and 40(46.5%) female cases in study group. Out of 86 cases 53(61.6%) were diagnosed with peptic ulcer disease including 28(52.8%) male and 25(47.2%) female cases. Male patients were having age range of 35-75 years with mean age+-SD of 48.7+-12.8 years and female patients with age range of 32-66 years with mean age +-SD of 41.3+-13.6 years. Out of total 21 males and 23 females with anemia, ferritin level between ranges of 15-19 ng/ml was present in 5(23.8%) males and 10-14 ng/ml in 9(42.8%) male cases. While 6(28.6%) male and 15(65.2%) female cases were having ferritin level between 5-9 ng/ml, one (4.7%) male case and 8(34.9) female cases were having ferritin level below 5 ng/ml. Among 86 cases 44(51.2%) cases had iron deficiency anemia and out of them 21(47.7%) were male and 23(52.3%) were female patients.



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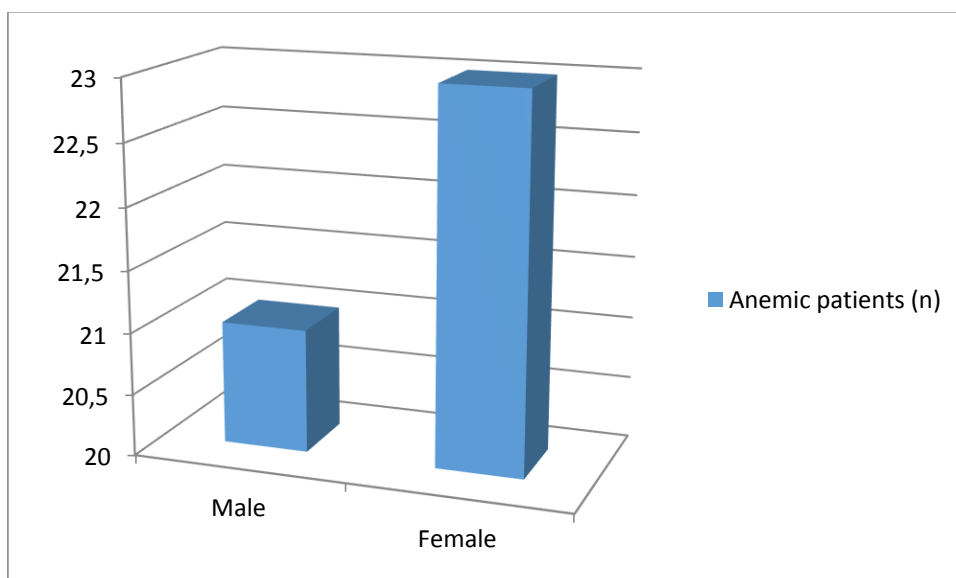


Figure-1 Gender distribution of anemic patients out of total 44 anemic cases

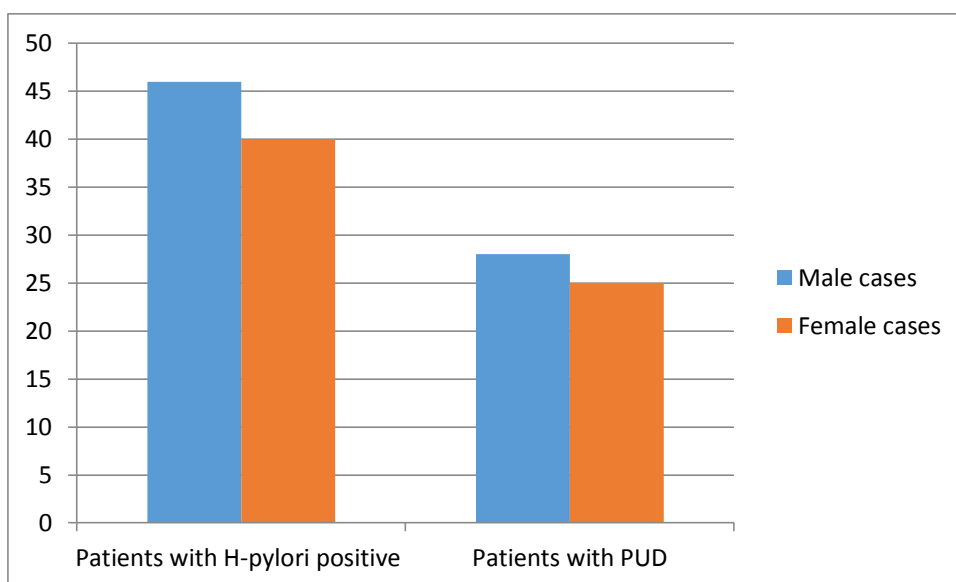


Figure-2 Frequency of Patients with H-pylori infection having Peptic ulcer disease

Table-1

Age distribution among patients of study group

Age of patients (years)	Male Patients (n=46)		Female Patients (n=40)	
	N	%	N	%
20-30	4	8.7	5	12.5
31-40	7	15.2	6	15
41-50	11	23.9	12	30
51-60	13	28.3	9	22.5
61-70	6	13	4	10
Above 70	5	10.9	3	7.5

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Table-2

Frequency of patients with low serum ferritin level

Serum ferritin level (ng/ml)	Male patients (n=46) Normal range (20-250 ng/ml)		Female patients (n=40) Normal range (10-120 ng/ml)		P Value
	N	%	N	%	
15-19	5	10.8	-		0.04
10-14	9	19.5	-		
5-9	6	13.04	15	37.5	
Below 5	1	2.2	8	20	
Total	21		23		

DISCUSSION

Helicobacter pylori infection is very common among people worldwide.⁹ This infection involves stomach and small intestine. This causes gastritis and if untreated may lead to peptic ulcer disease, perforation of duodenum and gastric lymphoma etc.¹⁰⁻¹³ In this study all patients were vitally stable without lethal complications of H-pylori like perforation and lymphoma. In this study association of h-pylori infection and iron deficiency anemia was determined. Helicobacter pylori is also known as Campylobacter pylori is a gram negative microaerophilic bacterium living in gastrointestinal system and mostly infects stomach and duodenum. It is transmitted via feco oral route. People having this infection usually present with upper abdominal pain, chest burn, indigestion, nausea, loss of appetite, bloating and weight loss.¹⁴ Many people are not symptomatic while having this infection and present late to doctor when signs and symptoms start appearing. This infection can be diagnosed by various tests such as urea breath test, stool culture, ELISA for h pylori and endoscopic biopsy for histopathology. Urea breath test is a very accurate method of diagnosing infection. This is a cross sectional study conducted in a teaching hospital. This study was completed in duration of five months.¹⁵ All cases presenting with signs and symptoms of acid peptic disease in outpatient-door were evaluated for H-Pylori infection. Blood samples for test were drawn from venous blood and stored in a glass vile. Serum was obtained from the sample and tests were performed. A performa was designed in which all related question were mentioned like age, signs and symptoms of H-pylori infection and peptic ulcer disease and clinical evident anemia important points of history, clinical examination and investigations were documented in it. Study subjects were selected in outpatient door of study hospital.¹⁶ Out of 365 cases of acid peptic disease reported in OPD of study

institution in duration of 5 months, only 86 cases were having H pylori infection diagnosed on various tests and these cases were selected for study. These cases belonged to male and female both populations having age above 30 years. There were 46(53.5%) male and 40(46.5%) female cases in study group. Out of 86 cases 53(61.6%) were diagnosed with peptic ulcer disease including 28(52.8%) male and 25(47.2%) female cases. Usually triple regimen of clarithromycin 500 mg bid, amoxicillin 1g bid and omeprazole bid. There are other regimens as well. This treatment is very effective in eradicating infection. H pylori causes iron deficiency in the patients leading to anemia. Such cases are pale and lethargic.¹⁷ Their iron store of body are depleted which can be measured by serum feritin level. In this study patients with h pylori infection were evaluated for iron deficiency anemia. In this study both male and female cases were included having age above 30 years. It was seen that anemia was most likely to occur in prolonged infection and almost equally involving both male and female patients.¹⁸ A study done in Alaska concluded high prevalence of H-pylori infection causing iron deficiency anemia in most of the people with infection. Another study done by Boggs reported increasw in serum ferritin level after taking triple regimen for H-pylori eradication in study cases.

CONCLUSION

H-pylori infection has high prevalence and involves gastrointestinal tract causing many complications mainly peptic ulcer disease. It is associated with iron deficiency anemia. If treated properly, anemia can be corrected. Triple regimen for H-pylori eradication is effective in reducing anemia. Initially anemia should be corrected with oral or intravenous iron therapy. Unhygienic life style is main cause of this infection.

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