

# Hematological Parameters in Patients with Helicobacter Pylori-Associated Gastric Cancer

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## **Abstract**

Hematological parameters in patients with H.pylori-associated gastric cancer in comparison with H.pylori-negative patients with same pathology were studied. There aware high differences between these two groups. In patients with H.pylori-associated gastric cancer were a higher disturbance of hematological parameters, than in patients with gastric cancer without H.pylori infection.

**Keywords:** *H.pylori, gastric cancer, haematological parameters*

## **Introductions**

**H**.pylori is a common bacterium and approximately 50 percent of the world's population has been estimated to be infected. H.pylori has been associated with several serious diseases of the gastrointestinal tract, including gastric cancer (GC) (2). H.pylori infection is now recognized as causing serious and life-threatening disease in 20% to 30% of those infected (6).

Since its discovery in 1982 by Warren and Marshall, H.pylori has been the topic of extensive research (2). During the last years, a great body of knowledge about H.pylori has been accumulated. Much, however, remains to be studied (3,7). There are a few data concerning the peculiarities of some parameters of laboratory assays.

## **Aim of study**

The aim of this study was to evaluate of hematological parameters and their peculiarities in H.pylori-positive patients with GC and to compare with H.pylori-negative patients with same pathology.

## **Materials and methods**

We have examined 58 patients with GC (III stage). Investigation of H.pylori infection was performed by using of invasive methods (cultural, rapid urease test, smear or histology). The biopsy specimens and resection materials were taken during the operations or endoscopy procedures. Collection, transportation, cultivation, incubation of materials and identification of H.pylori strains were performed by recently applied methods (1, 5). After that, patients with GC were divided

in two groups: H.pylori-positive 40 patients (I group), (72,22(10,55%, 88,88(7,4%, 94,44(5,39% -  
 H.pylori negative - 18 patients - control (II group). respectively).

## Results

Results are given in the table, which has demonstrated that hemoglobin is in normal ranges in 5,0(3,44% cases of H.pylori-positive patients in comparison with H.pylori-negative patients (72,22(10,22%). Hematocrit (color index) is in normal ranges in both groups. Erythrocytes, monocytes, lymphocytes were decreased more in patients of I group (24,50(6,80%, 70,0(7,24%, 52,5(7,89% - respectively) than in patients of II group

Leucocytes were in normal range in H.pylori-positive patients in 75,0(6,8%, but in 100% cases in H.pylori-negative patients. stick-liked neutrophiles and eosinophiles were almost equal frequency in both groups (92,5(4,16%, 95,0(3,44% in patients of I group and 100% in both cases in patients of II group - respectively). Segmented neutrophiles were in normal range in 72,5(7,06% in patients of I group and 94,44(5,4% in patients of II group. Erythrocyte sedimentation rate was in normal range in 20,0(6,32% and 16,66(8,78% of patients of I and II group.

HEMATOLOGIC PARAMETERS	I GROUP (N=40)						II GROUP (N=18)					
	Decreased		Normal		Increased		Decreased		Normal		Increased	
	Abs.	%	Abs.	%	Abs.	%	Abs.	%	Abs.	%	Abs.	%
1. Hemoglobin (g/l)	38	95,0± 3,44	2	5,0± 3,44	0	-	4	22,22± 9,79	13	72,22± 10,58	1	5,55± 5,39
2. Hematocrit (%)	0	-	40	100	0	-	0	-	18	100	0	-
3. Erythrocytes (10 <sup>12</sup> /l)	31	75,5± 6,8	9	24,50± 6,8	0	-	4	22,22± 9,79	13	72,22± 10,55	1	5,55± 5,39
4. Leucocytes (10 <sup>9</sup> /l)	4	10,0± 4,74	30	75,0± 6,84	6	15,0± 5,64	0	-	18	100	0	-
5. Thrombocytes (10 <sup>9</sup> /l)	20	50,0± 7,90	20	50,0± 7,90	0	-	2	11,11± 7,4	13	72,22± 10,55	3	16,66± 8,78
6. Neutrophiles: stick-liked (%)	3	7,5± 4,16	37	92,5± 4,16	0	-	0	-	18	100	0	-
segmented (%)	4	13,3± 5,36	29	72,5± 7,06	7	17,5± 6,0	1	5,56± 5,39	17	94,44± 5,4	0	-
7. Eosinophiles(%)	0	-	38	95,0± 3,44	2	5,0± 3,44	0	-	18	100	0	-
8. Monocytes (%)	0	-	28	70,0± 7,24	12	30,0± 7,24	0	-	16	88,88± 7,4	2	11,12± 7,4
9. Lymphocytes (%)	14	35,0± 7,54	21	52,5± 7,89	5	12,5± 5,22	1	5,56± 5,39	17	94,44± 5,33	0	-
10. Erythrocyte sedimentation rate (mm/h)	0	-	8	20,0± 6,32	32	80,0± 6,32	0	-	3	16,66± 8,78	15	84,33± 8,72

**Tab.1** Several hematological parameters in patients with GC.

### **Discussion and Conclusion**

The results of research shows that Hematological parameters H.pylori-positive patients with GC were more disturbed than in H.pylori-negative patients with same pathology. There were high differences between there two groups. Hemoglobin, erythrocytes, leucocytes, thrombocytes, lymphocytes etc., were in normal range

in less frequency than H.pylori-negative patients with GC.

So, according to our considerations, above-mentioned hematological disturbances show complicate effects of H.pylori infection on the health of patients with GC.

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## **Гематологические показатели у больных раком желудка с ассоциированным *Helicobacter pylori***

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### **Р Е З Ю М Е**

Изучили гематологические показатели у больных раком желудка с ассоциированным *H.pylori* и сравнивали с показателями больных той же патологией, без *H.pylori*-инфекции. Различие гематологических показателей между этими двумя группами очевидно. Разные гематологические нарушения у *H.pylori*-позитивных пациентов более высокие, чем у *H.pylori*-негативных пациентов.

**Ключевые слова:** *H.pylori*, рак желудка, гематологические показатели