Obstetrics; *Maternal-Fetal Medicine and Perinatology*

Hyperemesis Gravidarum and Helicobacter Pylori Stool Antigen Positivity

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OBJECTIVE: Nausea and vomiting of pregnancy (NVP) is a common problem for patients during first trimester. The causes of this problem are multifactorial. Recent studies have shown association between hyperemesis gravidarum (HG) and Helicobacter Pylori infection. We aim to evaluate this association.

STUDY DESIGN: Thirty-seven patients who were diagnosed HG were compared with 40 asymptomatic pregnant women. Direct stool antigen testing with using ELİSA (Enzyme Linked İmmunosorbent Assay) was performed.

RESULT: Helicobacter pylori stool antigen was detected in 11 (27.5%) patients in control group. in HG group Helicobacter pylori stool antigen was detected in 8 (21.6%) patients. there were no statistically significant difference.

CONCLUSION: Our study was unable to confirm association between HG and H. pylori. For elimination of genetic factors different population is should be evaluated.

Keywords: Hyperemesis gravidarum, Helicabacter pylori, Stool antigen positivity

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Introduction

Nausea and vomiting of pregnancy (NVP) is a common problem for patients during first trimester. This problem affects approximately 80% of pregnant women to some degree.[1] The severe form of NVP is called hyperemesis gravidarum (HG). Although, most cases are not severe and curable with conservative methods, less than 1% women experience severe nausea and vomiting during their pregnancy. This severe form of NVP usually associated with weight loss, dehydratation, electrolyte imbalance and acid-base imbalance.[2] Hyperemesis gravidarum typically occurs during first trimester, especially, between 4th and 10th week.[3]

Many etiologic factors were suggested for cause of HG. However, the most accepted etiologic factor of HG is endocrine changes of pregnancy.[4,5,6,7,8] Some gastrointestinal tract (GIT) pathologies have been proposed as cause of HG. The most prominent GIT pathology is Helicobacter pylori (H. Pylori) infection. Many studies were shown relation between HG and H. pylori.[9,10,11,12] In our study we aimed to evaluate the relation between HG and H. pylori.

Material and Method

Our study includes 77 patients. Two groups of patient were evaluated. Group I included 37 patients who were suffering from nausea and vomiting. Group II included 40 patients who had no symptoms and applied for routine follow up. Patients with HG were compared to control group. The HG group was included 37 patients and control group was included 40 patients. Patient with severe vomiting and ketonuria was considered as HG. Control group was composed of forty pregnant patients who had not suffering from vomiting and nausea. All patients were between 5 to 16 weeks. Patients with multiple gestation, known thyroid disease, hepatic disorders, gastrointestinal disorders and any treatment with antacids and antibiotics within 7 days were excluded from study. Gestational age was confirmed by ultrasound. Liver function test were performed for all patients. The treatment for HG was started after stool specimen was collected. Samples were stored in clean cups. All samples were tested for H. pylori stool antigen (HpSA) using direct stool antigen testing with ELİSA (Enzyme Linked İmmunosorbent Assay). Statistical analysis was performed by using SPSS 17.0. Shapiro-Wilk test was used for determination of normality. Chi- square test was used

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for comparison of group serologic status. P values less than 0.05 was considered as significant

Result

Demographic features of the groups are shown in table 1. Age, body mass index and parity were compared and there were no significant difference between two groups. There were no differences between two group's demographic features. Helicobacter pylori stool antigen was detected in 11(27, 5%) patients in control group. The prevalence of HpSA H. G group was less than control group and it was detected in 8 (21, 6%) patients (Table 2). There was no statistically difference between two groups.

Table 1: Demographic features of groups

Variables ± SD	H. G.	Control	P
Age	27.2±7.91	24.9±6.46	.173
BMI	23.8±4.49	24.3±4.52	.627
Parity	4.2±2.38	3.4±2.48	.117
Gestational age	10.45±2.93	10.29±2.65	.869

Table 2: Helicobacter pylori status of each groups

	H.G.(n= 37)	Control (n=40)	P
Helicobacter status	8 21.6%	11 27.5%	.55

Discussion

Helicobacter pylori is major etiologic factor in the development of peptic ulcer and chronic active gastritis. Some studies suggest that H. pylori not only increases gastrointestinal disorders but also cardio vascular diseases. Recently, studies and meta-analysis of case control studies were shown relation between HG and H. pylori. These studies were based on the idea of hormonal changes in pregnancy. These hormonal changes have influences on gastric pH, gastric motility and immune response to H. pylori. According to physiologic chances, it could be reason for activation of inflammation.

The prevalence of H. pylori infection is 50- 60% in all over the world.[13] Stool antigen testing shows active colonization. In our study stool antigen was positive in 19 (24.7%) patients of 77 patients. This rate is similar with previous studies.[14]

Different techniques could be used for testing H. pylori infection. The gold standard is endoscopic biopsy. But this technique is highly invasive; it is not preferred in pregnant patients. A study which used endoscopic biopsy for detection of H. pylori infection was suggested correlation between HG and H. pylori.[16] Direct stool antigen testing is easy method for especially in pregnant patients. This technique is preferable way for evaluation of H. pylori status in pregnant women.[17,18] It has been approved by the US Food and Drug Administration for diagnosis and follow up testing.[19] Fecal antigen testing is also helpful for evaluation of H. pylori load and gastric inflammatory activity.[20] This test has 89% sensitivity and 94% specificity.[19] In our study we used direct fecal antigen testing as an easy and fast method for detection of H. pylori.

Many studies were suggested the relation and many others were unable to confirm the relation. Recently published meta-analytic studies were suggested the relation.[10,11] In these studies authors were suffering from heterogeneity of groups. In our study we were unable to confirm a relation. Helicobacter pylori stool antigen was detected 27.5% of control group and 21.6% in HG group. These findings mean H. pylori is more common in control group. However, the difference was not statistically significant (p=0.55). A possible explanation for these different findings could be the familial and genotypic aggregation. A study from Norway was shown that the influences of maternal genotype on HG. They concluded that risk of HG was common in women whose mother had experienced HG and they also suggested that maternal genes are more important than fetal genes.[21] Another study was shown the familial aggregation of HG.[22] Familial predisposing factors and different environment factors could influence severity of nausea and vomiting. This could be a reason for different results.

Conclusion

Our study was unable to confirm an association between HG and H. pylori. However, our study showed only a small social group's results and it was also limited to a small number of cases. Results from different populations should be evaluated for elimination of genetic differences.

Hiperemezis Gravidarum Olgularında Helikobacter Pylori Antijen Pozitifliği

AMAÇ: Bulantı ve kusma (hyperemesis gravidarum, HG) ilk trimester gebelik sorunlarının başında gelir. Nedenleri ise çok çeşitlidir. Son çalışmalarda HG ile Helicobacter Pylori enfeksiyonu arasında ilişki bulunmuştur. Bizde bu ilişkiyi araştırdık.

GEREÇ VE YÖNTEM: HG tanısı alan 37 olgu ile 40 asemptomatik gebe olgu karşılaştırıldı. Gaitada Helicobacter Pylori Antigeni ELISA (Enzyme Linked İmmunosorbent Assay) ile değerlendirildi.

BULGULAR: Helicobacter pylori stool antijeni sırası ile kontrol grubunda 11 (%27,5) olguda HG grubunda ise 8 (%21,6) olguda belirlendi. İstatistiksel olarak her iki grup arasında farklılık bulunmadı.

SONUÇ: Çalışmamızda HG ile Helicobacter pylori arasında ilişki bulunamadı. Farklı popülasyonlardaki genetik farklılıklar bu ilişkide elimine edilmelidir.

Anahtar Kelimeler: Hyperemesis gravidarum, Helicobacter pylori

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