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KLİNİK ARAŞTIRMA *Pediatri*

Helicobacter pylori in children with chronic immune thrombocytopenic purpura

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SUMMARY

Objective: *The role of Helicobacter pylori (Hp) infection in relation to the development and/or persistence of ITP in infected patients still remains controversial. The aim of this study was to determine the prevalence of Hp in chronic ITP and compare the incidence of Hp positivity with healthy control group.*

Material and Methods: *For this purpose, 19 patients with chronic ITP were followed at department of Pediatric Hematology of Dicle University Hospital and were evaluated for Hp IgG antibody positivity and hematological parameters. Control group consisted of 24 healthy children followed up at the outpatient clinic.*

Results: *Hp IgG was positive in 11 of 19 cases in the study group (57.8 %) and 12 of 24 cases in control group (53.4 %). In terms of Hp positivity, means there was no statistically significant difference between the two groups (p>0.005).*

Conclusion: *Hp IgG seroprevalance in study and control groups were similar with other age matched studies reported from our country. In chronic ITP cases, the results were similar, and no significant difference was present between study and control groups. Steroid or IVIG therapy resistant or frequent relapsing chronic ITP patients, investigation for Hp and eradication therapy for Hp positive patients may be recommended.*

Key words: *Helicobacter Pylori, Childhood, Chronic ITP*

ÖZET

Kronik immün trombositopenik purpurası olan çocuklarda helikobakter pilori

Amaç: *Son yıllarda Helicobacter Pylori (Hp)'nin ITP'li hastalarda daha yüksek oranda bulunduğu ve eradikasyon tedavisinini trombosit sayısını yükselttiğini gösteren bir çok çalışma literatürde mevcuttur. Bu çalışmada Kr ITP'li hastalarda Hp pozitifliğinin sağlıklı bireylere göre daha sık görülüp görülmediğinin araştırılması amaçlandı.*

Gereç ve Yöntem: *Çalışmaya Dicle Üniversitesi çocuk sağlığı ve hastalıkları hematoloji polikliniğinde kronik ITP tanısıyla düzenli takiplere gelen izlenmekte olan 19 hasta ve kontrol grubu olarak çocuk polikliniğine başvuran sağlıklı 24 çocuk çalışmaya dahil edildi.*

Bulgular: *Hasta grubunda 19 hastanın 11'inde (% 57.8), kontrol grubunda is 24 hastanın 12'sinde (% 50), toplamda çalışmaya alınan 43 hastanın 23 ünde (% 53.4) Hp IgG pozitif saptandı. Kr. İTP'li hastalarda Hp sıklığının artmadığı görüldü.*

Tartışma: *İTP' li hastalarda ve kontrol grubunda Helicobacter IgG seroprevelansı ülkemizde benzer yaş gruplarında yapılan çalışmalarla uyumlu idi. Kr. İTP hastalarında da benzer oranda bulundu ve kontrol grubuyla arasında anlamlı bir fark bulunamadı. Buradan yola çıkarak steroid ve immünglobulin tedavisine yanıt vermeyen veya tedavi sonrası trombositleri hızla düşen Kr. İTP olgularında Hp araştırılması ve sonucun müspet olduğu durumlarda eradikasyon tedavisinin verilmesini önerilmektedir.*

Anahtar kelimeler: *Helikobakter Pilori, Çocukluk çağı , Kronik ITP*

Idiopathic thrombocytopenic purpura (ITP) is a disease which seen in late childhood without any clinic symptoms and just with thrombocytopenia and diagnosed after elimination of other thrombocytopenia reasons [1]. Helicobacter pylorus (Hp) is gram-negative bacteria which has an important reason of peptic ulcer and gastritis and have association with adenocancer and gastric lymphoma [2,3]. In studies, it has been determined that Hp has also an association with autoimmune diseases

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especially with ITP [4,5-8].

Relation between Hp and ITP is a new interesting study area for pathogenesis and therapy. Instead of many studies about Hp in ITP patients on platelet response to eradication, and role of bacteria in ITP pathogenesis, the subject is still unclear. In this study, we aimed to research the frequency of Helicobacter Pylori IgG seropositivity in patients diagnosed as chronic ITP and to compare them with healthy children patients of the same age and sex.

MATERIAL and METHODS

In this study, there were 19 chronic ITP patients who were diagnosed, followed and treated in Pediatric Hematology Department of Dicle University Hospital and control group with 24 patients who had no hematological or chronic disease. In our study, criteria of chronic ITP were defined on those patients who were followed by us and had thrombocytopenia at least 6 months, platelet counts were fewer than 150000/mm^3 when blood samples were taken and who did not have another disease that could cause thrombocytopenia.

From all individuals to determine Hp IgG, 3-4 cc blood examples were taken to tubes with gel from antecubital area veins. All the blood examples were centrifuged and separated from sera. The sera were kept at -20ºC in deep freezer to work on them. Then, with Daha ELISA method Hp IgG and Hp IgM were worked. In our study, Captia-RPylori IgG High complexity kit was used. In this kit, the sensitivity was 96 %, and specificity 97 %.

RESULTS

Of 19 chronic ITP patients, 8 were female (42 %), 11 were male (58 %). Male/female ratio was 1.3:1. The mean age was 5.5±3.3. In control group there were 12 male (50 %), 12 female (50 %) with mean age 6.3±3.6. The difference between mean ages was not significantly (p>0.005), ranging from 11 months to 13 years.

In patients who were diagnosed as chronic, the lowest platelet count was 5.000/mm^3, the highest was 36.900/mm^3 and mean platelet count was 14.23±8.91/mm^3. In control group mean platelet count was 336.58±97.39/mm^3. There was significant difference of platelet counts between the two groups (p<0.001).

In all blood samples from control and patients groups, Hp IgG ve IgM were worked. Of 43 individuals, 23 children (53.4 %), 11 from the patients group (57.8 %) and 12 subjects from control (50 %), had positive Hp IgG. There was no positive IgM in all patients.There was no statistically difference between the groups (p>0.005). There was also no significant differences of platelet counts, leukocyte counts, and hematocrit levels between Hp positive and negative patients (p>0.005). However, of 23 patient with positive Hp, 7 were male (30.4 %) and 16 were female (70.6 %). There was significant difference of seropositivity between sexes. In patients group, of 11 patients with Hp positive 8 were girl (72 %).

DISCUSSION

Many studies have been carried out since 1983, when Hp role was found in peptic ulcer etiology, and eradication has marked a new era in peptic ulcer treatment. In recent years, it has been claimed that spiral bacterium takes a role in etiology of many immune diseases [9,10]. It was thought that effect of Hp in stomach might be secondary immune response due to inflammation [11,12]. The effects on other systems might be due to crosswise reactions with antibodies against antigens of helicobacter.

In many studies published since 1998, Hp frequency is significantly high in both chronic ITP patients and healthy individuals at the same age group [13-23]. However, a lange part of these studies was performed in Italy and Japan, where Hp was found

at high rates in healthy population.

Michel et al. in France found low prevalence (29 %) in 51 adult ITP patients. The same rates were found in the control group and there was no significant difference of age, sex, and response to treatment in control and patient group [24].

Hp rates in Turkey should be the same asthose in developing countries the if we consider data found earlier. Data of antibodies rates from this and other some studies may rank Turkey between developed and developing countries. In other areas of Turkey, Hp rates were found to be similar to with these data. In 1994, Özden et al. found Hp antibody positivity in 50 % of children who were between 0-7 ages [25]. In 1996, Gürkan et al. reported antibody positivity 50 % in asymptomatic individuals between 10-14 ages [26]. In 1998, Doğancı et al. found high rate of antibody positivity in 74% of 60 children patients between 0-5 ages [27].

In a study published in 2004, the findings were evaluated, and Hp was found in 278 patients (57.7 %) from 482 ITP patients by various diagnostic methods [28]. In another study performed by the same researchers in 2006, Hp was found in 306 patients (54,8 %) from 524 ITP patients [29]. Eradication was made in 83% of patients with Hp, and there was remission in partial or complete in these patients.

In another study carried out by Kurtoğlu et al. Hp rate was found 68.5 % in 38 ITP patients and 65.2 % in control group; there was no statistical differences of Hp rates between the two groups [30]. We should evaluate these data cautiously, because Hp has different rates in different areas and races. In most of the studies, the eradication of Hp is an effective treatment to improve platelet counts. However, there are not enough studies and there are different results in some of the studies.

It seems that there is a certain association between Hp and chronic ITP, but to show that correlation is not possible now. In childhood, many viral infections and autoimmune processes may play role in etiology of chronic ITP; auto immune mechanism due to Hp may be just one of the reasons in etiology of chronic ITP because seroprevalence of Hp in chronic ITP is not significantly higher than normal population [25].

The most important question that should be asked here is whether to give eradication to all chronic ITP patients or not. There are studies indicating that, in patients with Hp, platelet counts are significantly increased, thrombocytopenia attacks become less, and some patients have complete remission by eradication treatment [13-23]. Some scientists recommend the eradication therapy to avoid long-term side effects of steroid and immunoglobulin for patients with Hp who have no response to steroid and immunoglobulin therapy, sudden decreased platelet counts [25].

In conclusion, in chronic ITP patients and control groups, Hp rates were similar to those in studies carried out on the same ages groups in our country. The results are similar as well as with chronic ITP patients, and there is no significant difference between control groups. Hp rates are not higher in chronic ITP patients. However, in similar studies, different data have been found. In some studies, platelet counts increased and thrombocytopenia attacks were seen less commonly with eradication treatment. According to these findings, patients with chronic ITP who have no response to steroid and immunoglobulin and sudden decreased platelet counts after treatment may be evaluated for Hp; but this data should be supported with many studies include more cases.

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