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CLINICAL REPORT

Peptic Ulcer and *Helicobacter pylori* in Patients with Lichen Planus

EEVA VAINIO[1], S. HUOVINEN[1], MERVI LIUTU[1], JAAKKO UKSILA[2] and R. LEINO[3]

Departments of [1]Dermatology, [2]Medical Microbiology and [3]Internal Medicine, University of Turku, Turku, Finland

The aetiology of lichen planus is unknown, but it is often connected with infections. In recent years peptic ulcer disease has also been closely linked with an infectious agent, *Helicobacter pylori*. A case-control study was conducted in 78 patients with lichen planus to find out a previous history of peptic ulcer disease, using a questionnaire and a medical record review. Patients were also asked about family history in first- and second-degree relatives. Fifty-seven patients with other skin diseases were interviewed as controls. The prevalence of *H. pylori* infection in patients with lichen planus was compared to that of 39 patients with other skin diseases and to the overall prevalence rates of *H. pylori* infection in Finland. Our findings are consistent with an approximately three-fold increased risk of peptic ulcer in patients with chronic/repeating lichen planus, when compared to the control patients ($p = 0.04$) and also to the overall peptic ulcer prevalence rates in Finland. Forty-one percent of the patients with chronic/repeating lichen planus had a first- or second-degree family member with a peptic ulcer, while the corresponding rate in the control group was only 12% ($p = 0.003$). The prevalence of *H. pylori* infection in patients with chronic/repeating lichen planus and transient lichen planus was not significantly different from that in patients with other skin diseases. *Key words: chronic; repeating; lichen planus; peptic ulcer.*

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Eeva Vainio, Department of Dermatology, University of Turku, Box 52, FI-20521 Turku, Finland.
E-mail: eeva.vainio@tyks.fi

Lichen planus (LP) is a skin disease which is easily diagnosed by means of its characteristic clinical picture of polygonal, flat, violaceous papules and plaques with white lines on their surface. The aetiology of LP is unknown although infections and stress are suspected to be triggering factors. Another stress-related disease, peptic ulcer disease, has in recent years been found to be closely connected to *Helicobacter pylori* infection (1). In fact, LP is also an ulcerating disease. In the oral mucosa in particular, LP quite often produces painful ulcers that are resistant to most treatments. In the skin, LP is rarely ulcerating but can be regarded histopathologically as such. The basal keratinocytes undergo a liquefaction degeneration and are replaced by migrating keratinocytes from the edges of the lesion, just as in wound healing (2). Historically, both LP and peptic ulcer disease have been treated with bismuth subsalicylate, which is included in the drug combinations used for *H. pylori* eradication (3).

This case-control study was designed to investigate whether chronic/repeating or transient LP is associated with peptic ulcer and/or *H. pylori* infection. As *H. pylori* infection can be transmitted by close contact between family members, we were interested in the history of peptic ulcer disease in the families of patients with LP, as well as in patients with LP themselves.

MATERIAL AND METHODS

The study sample consisted of 78 consecutive patients with LP (39 men, 39 women) treated at the Department of Dermatology, Turku University Central Hospital, between January and September 1993. Patients who had regularly used non-steroidal anti-inflammatory drugs or oral steroids and patients with oral lesions only were not included. Chronic LP (symptoms for 5–34 years continuously) was detected in 14 patients (mean age 57 years), repeating LP (2 or 3 periods of symptoms over the course of 5–38 years) in 15 patients (mean age 52 years) and transient LP (symptoms for ω 2 years) in 49 patients (mean age 50 years). Diagnosis was based on typical clinical and histopathologic findings.

A questionnaire was used to interview 75 patients with LP and 57 patients with various skin diseases who were visiting the outpatient clinic (the only inclusion criterion being to match the sex and age distribution of the LP study group) in order to ascertain the prevalence of previous peptic ulcer disease in the patients themselves as well as in family members, including siblings and parents (first-degree family members) and grandparents (second-degree family members). The data of peptic ulcer disease among relatives were based on the history taken from the study patients. A positive history of peptic ulcer disease in patients with LP was confirmed from medical records (diagnosis based on esophagoduodenoscopy or radiography). In 3 (of the 78) patients peptic ulcer history was obtained solely from medical records and family history was unavailable. These data were related to the nature of LP, i.e. whether chronic/repeating or transient. Serum IgG antibodies to *H. pylori* were measured in all 78 patients with LP using an enzyme immunoassay (Pyloriset EIA-G; Orion Diagnostica, Espoo, Finland) (4). The prevalences of IgG antibodies to *H. pylori* in 39 patients with psoriasis or chronic urticaria (20 men, 19 women; mean age 55 years), and in the Finnish population in general were used as controls (5).

For statistical analysis, patients with chronic/repeating LP were combined separately from the patients with transient LP, who possibly had different disease-provoking factors. The statistical analyses were performed using BMDP software. The χ^2 test was used to examine differences in ulcer and *H. pylori* prevalences between the different patient groups.

RESULTS

A previous peptic ulcer was reported by 8 of 29 patients with chronic/repeating LP and by 4 of 49 patients with transient LP (Table I). Six of the randomly chosen 57 control patients with skin diseases had suffered from a gastric or duodenal ulcer. The difference between patients with chronic/repeating LP and the controls was statistically significant ($p = 0.04$), the lifetime risk of peptic ulcer being 3 times higher in patients with chronic/repeating LP than in the controls (odds ratio 3.24, 95% CI 1.00–10.48).

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Table I. *Helicobacter pylori infection and peptic ulcer in 78 examined patients with lichen planus (LP) and in control patients with other skin diseases: incidences, with percentages in parentheses*

Patient group	*H. pylori*-positive	*H. pylori*-negative	History of peptic ulcer
Chronic/repeating LP (n= 29)	19 (66)	10 (34)	8 (28): 6 *H. pylori*-positive; 2 *H. pylori*-negative
Transient LP (n= 49)	24 (49)	25 (51)	4 (8): 3 *H. pylori*-positive; 1 *H. pylori*-negative
Total (n= 78)	43 (55)	35 (45)	12 (15): 9 *H. pylori*-positive; 3 *H. pylori*-negative
Controls I[a] (n= 39)	21 (54)	18 (46)	
Controls II[b] (n= 57)			6 (10.5)

[a]Patients with chronic urticaria and psoriasis, whose *H. pylori* IgG antibodies were determined.
[b]Patients with various skin diseases interviewed about peptic ulcer history.

Of the patients with chronic/repeating LP, 41% had 1 or 2 family members (all first-degree relatives) with a history of peptic ulcer, while the corresponding rates in patients with transient LP and other skin diseases were only 15% and 12%, respectively (Table II). There was a statistically significant difference (p= 0.003) when comparing the prevalence of peptic ulcer in the family members of 27 patients with chronic/repeating LP with those of the controls (odds ratio 4.91, 95% CI 1.63–14.77).

H. pylori infection was detected in 19 of 29 patients with chronic/repeating LP and in 24 of 49 patients with transient LP, whereas in a control group of 39 patients with psoriasis or chronic urticaria 21 were *H. pylori* IgG-seropositive (Table I). The differences between patients with LP and patients with psoriasis or chronic urticaria were not statistically significant.

DISCUSSION

A new finding to emerge from our study was the clearly higher prevalence of peptic ulcer in patients with chronic/repeating LP than those in the control group and the general Finnish population. Of these patients, 28% had a history of peptic ulcer, whereas endoscopically verified ulcers are found in 5.9% of the general Finnish population (6). In a Danish study, the lifetime prevalence of ulcer was 7.7% in men and 3.6% in women (7) and the corresponding values in a Finnish study comprising 30,000 adult patients were 6.2% and 2.8%, respectively (8). The age-related ulcer prevalence between the ages of 50 and 54 years in Finland is 13% in men and 5.3% in women (8). In our patients with chronic/repeating LP, 36% of men and 20% of women had a history of peptic ulcer. In contrast, the prevalence of peptic ulcer in patients with transient LP did not differ from that in the controls and in the general population. There is most probably an over-representation of chronic cases in our patient material, because the study was carried out in a university hospital. It is reasonable to think that prolonged LP may differ from a transient disease in some respects, for example in terms of the inherited susceptibility of the patient to develop LP or the provoking factors behind the disease. Thus, associated diseases may also be different in these subgroups.

Table II. *Occurrence of peptic ulcer and lichen planus (LP) in family members of 75 interviewed patients with LP and in control patients with other skin diseases*

Patient group	Number of LP patients having a family member with peptic ulcer (%)
Total (n= 75)	18 (24)
H. pylori-positive (n= 40)	9 (23)
H. pylori-negative (n= 35)	9 (26)
Chronic/repeating LP (n= 27)	11 (41)
Transient LP (n= 48)	7 (15)
Controls (n= 57)	7 (12)

Our study points to a higher, possibly inherited, risk of peptic ulcer in patients with chronic/repeating LP. Although *H. pylori* has a primary role in the aetiology of peptic ulcer disease only a minority of individuals with *H. pylori* infection will develop peptic ulcer. It was shown in a recent Finnish twin cohort study that familial aggregation of ulcer disease was attributable to genetic factors (8). Thus, inherited traits are also important. Of our patients with chronic/repeating LP, 41% also had 1 or 2 family members with a history of peptic ulcer while the corresponding rate in the control patients was only 12%. These figures are based on interviews only and must be interpreted with some caution. However, peptic ulcer is a well-defined entity that is known to the general population. This finding among the family members might thus support the idea of a higher inherited risk of peptic ulcer in patients with the chronic type of LP.

In our study *H. pylori* infection was found in 66% of patients with chronic/repeating LP, which is somewhat higher than in the age-related control groups, but the difference was not statistically significant. The majority of our patients with previous peptic ulcer were still *H. pylori*-positive because their ulcer history dated back to the time when the role of *H. pylori* in ulcer development was unknown. Of the 3 *H. pylori*-negative patients, we do not know whether *H. pylori* had been eradicated or if they had perhaps developed an atrophic gastritis with conversion to a seronegative state. Our hypothesis was that *H. pylori* could be a provoking factor behind LP, especially as a chronic infecting agent maintaining prolonged LP, but we did not find any evidence in favour of this hypothesis. However, the aetiology of LP is probably multifactorial and the possibility still remains that *H. pylori* may trigger LP in certain individuals. An autoimmune mechanism has been suggested in LP, and *H. pylori* has been associated with autoimmune processes in susceptible patients (9).

Our findings indicate an elevated risk of peptic ulcer disease in chronic/recurrent patients with LP, and therefore eradication of *H. pylori* as a major risk factor for peptic ulcer should be considered in these patients. Future studies should be directed towards clarifying possible common features of LP

and peptic ulcer disease, in terms of genetics and pathomechanism.

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