



Relationship between Lichen Planus and *Helicobacter pylori* positive patients in Karachi- Pakistan

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Abstract:

Lichen planus (LP) is a chronic inflammatory disorder of oral mucosal surfaces and might have an association with H. pylori infection. This study findings indicated that 62 (77.5%) were found positive with H. pylori by detecting of IgG by ELISA kit and 18 (22.5%) were found negative. H. pylori positive patients with Oral Lichen planus (LP) belonged to 31-40 years age group (38.70%). As far as the age wise distribution is concerned, 39 (62.90%) were female with H. pylori positive and LP individuals and 23 (37.09%) were male. In the control study group, a small portion of subjects i.e 37 (46.25%) were found positive with H. pylori and 43 (53.75%) were found negative. As far as the age wise distribution is concerned, 21 (56.75%) were female with H. pylori positive individuals and 16 (43.24%) were male. Results very clearly indicate that there is certain relationship between OLP and H. pylori and more n female than male.

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Introduction:

Lichen planus (LP) is originated from Greek language word *leichen* (tree moss) and Latin *planus* (flat) (Boyd & Neldner 1991). LP is very rare in children as compared to adults (Singal & Pandhi 2004). Lichen planus is actually a cutaneous inflammatory disease of the skin and mucous membranes of oral and genital tract (Majid & Zahed 2012), hair and nail (Devrajani *et al.* 2009). Lichen *planus* (LP) is found all over the world regardless of any race, caste and creed (Zenouz *et al.* 2010). The actually root cause of LP is not still known yet it is thought to be an immunologically mediated complication (Majid & Zahed 2012). Males are not commonly affected but females has a high rate of this disease (Zenouz *et al.* 2010). LP is very rare in children as compared to adults (Singal & Pandhi 2004). *Helicobacter. pylori*, was identified the very first time identified since a century ago (Marshall 1989). *H. pylori* are gram-negative, flagellated, spiral-shaped bacteria found in the stomach (Sherwani *et al.* 2013). *H. pylori* infection is present all across the globe (Fathy *et al.* 2009) and it has been reported in about 50% in the world population; with 80% in developing countries and 20 - 50% in developed part of the world. (Megraud 1993). Some researches provide a clue that *H. pylori* have certain relationship role in different extragastric diseases (Nilsson *et al.* 2005; Fathy *et al.* 2009). In the same connection, the discovery of new *Helicobacter* species has sparked an area of research into different extragastric diseases, which is thought hypothetically (Riggo *et al.* 2000). This study is also meant to study any relationship between between Lichen Planus and *Helicobacter pylori* infection.

Materials and Methods:

The study was conducted on the subjects who were referred to the Department of Dentistry, Oral Medicine/ Oral Pathology (WHO Collaborated Research Centre for Oral Diseases) at Jinnah Postgraduate Medical College (JPMC), Karachi-Pakistan. For this study 80 patients were selected of above 15 years of age, of either gender and were diagnosed with lichen planus (LP) and their blood samples were collected during the period of January 2012- April 2012. In this study, 47 female and 33 male were included. Sampling was done by simple non-random way. Similarly, 80 patients were taken as control. The detailed clinical history of patients was also collected via questionnaire after confirmation of lichen planus (LP). The patients with oral lesions were included which gave the appearance and histological appearance of oral lichen planus. Verbal informed consent was taken from every patient as a part of ethics after giving entire details of study purpose. The patients who were already on Helicobacter pylori eradication therapy and those who were non cooperative or did not give consent were excluded from the study. Around 5 ml of blood samples were collected by phlebotomist , harvest sera and then Helicobacter pylori infection was assessed LP patients and controls by using *H. pylori* IgG quantitative enzyme immunoassay kit (ELISA test, BioSource, USA).

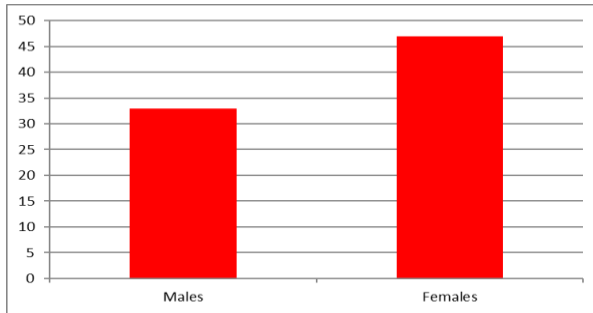


Fig 1: The total subjects with Oral Lichen Planus (LP) were 80 who participated in the study. Among them 33 were male and 47 were female.

Table 1: Serodiagnosis (Ig G) Test in Patients (n= 80) with Oral Lichen Planus (LP):

Oral Lichen Planus patients	n= 80	%
Positive	62	77.5
Negative	18	22.5

Table 2: Age wise distribution of *H. pylori* patients with Oral Lichen Planus (LP) (n=62):

Age	n=62	%
15-20	04	6.45
21-30	06	9.67
31-40	24	38.70
41-50	18	29.03
51-60	05	8.06
61-70	05	8.06

Table 3: Gender wise distribution of *H. pylori* positive patients with Oral Lichen Planus (LP) (n=62):

Gender	n=62	%
Male	23	37.09
Female	39	62.90

Table 4 : Serodiagnosis (Ig G) Test in Control Group(n= 80):

Oral Lichen Planus patients	n= 80	%
Positive	37	46.25
Negative	43	53.75

Table 5 : Gender wise distribution of *H. pylori* positive patients (n=37):

Gender	n=37	%
Male	16	43.24
Female	21	56.75

Results and Discussion:

H. pylori infection has been linked with gastritis, peptic ulcer and gastric carcinoma by a number past studies (Sherwani *et al.* 2013; Goodwin *et al.*, 1986). It is mainly resulted due to gastric epithelium destruction by the invasion of pathogenic bug and starting of local inflammation (Blaser 1992). Despite of this fact that *H. pylori* is universally believed to have confine location in the gastric mucosa (Webdi & Kappa 2002), yet the in the recent past some researches also pointed out its role in various other diseases (Koster *et al.* 2000). LP has been involved in different medical disorders such as hepatitis C, diabetes mellitus, ulcerative colitis, virus infection, vitiligo, dermatomyositis, and alopecia areata. (Akhter *et al.* 2007). The current study was conducted on 80 total subjects whom have been clinically diagnosed with Oral Lichen Planus (LP). Among them 33 were male and 47 were female as mentioned in Fig 1. Upon the serodiagnosis of these LP patients, surprisingly majority of them were diagnosed with *H. pylori*. According to the result findings, 62 (77.5%) were found positive with *H.*

pylori by detecting of IgG by ELISA kit and 18 (22.5%) were found negative as indicated in Table 1. Moreover, most of the *H. pylori* positive patients with Oral Lichen planus (LP) belonged to 31-40 years age group (38.70%) as indicated in Table 2. As far as the age wise distribution is concerned, 39 (62.90%) were female with *H. pylori* positive status along with LP and 23 (37.09%) were male as pointed out in Table 3. In the control study group, a small portion of subjects' i.e 37 (46.25%) were found positive with *H. pylori* by detecting of IgG ELISA kit and 43 (53.75%) were found negative as indicated in Table 4. As far as the age wise distribution is concerned, 21 (56.75%) were female with *H. pylori* positive status and 16 (43.24%) were male as mentioned in Table 5. In view of all results, conclusively; there is some relationship between *H. pylori* infection and LP and also this association level was slightly more in female than male. Similar findings were observed by urea breathing test (UBT), *H. pylorus* was observed to be significantly higher in patients with LP as compared to other skin diseases patients (Moravvej *et al.* 2008). On the contrary, a couple of research findings were also reported in the literature that totally disagreed with the concept of any relationship of LP with *H. pylori* patients. One of the studies was done on 27 patients with oral lesions of LP, 7 patients with oral aphthous ulcers, 7 patients with lichen planus, but did not find any statistically significant relationship (Shirazi 2003). Another study that was conducted on 45 LP patients, the results again showed no prominent relational at all (Jimenes-Alonso *et al.* 2000). The plausible mechanism behind the involvement of *H. pylori* in the pathogenesis of extra-intestinal other clinical conditions is its local inflammation that has systemic impact on other parts of the body (Fathy *et al.* 2009). The pathogen binds, colonizes gastric mucosa and ultimately provokes a strong inflammatory response resulting in the release of a number of bacterial and host-dependent cytotoxic mediators (Qayoom & Massoud 2001).

Moreover, this pathogen is blessed with urease enzyme which develops an alkaline cloud all around acidic environment to protect the organism from the acid attack (Langenberg *et al.* 1984).

Conclusion:

According to results analyzed in this study, a relationship was found between Oral Lichen Planus and *H. pylori* infection and to some extent more in female than male. However, the study was conducted on small group as for more characteristically comprehensive results, a big study group would provide more detailed picture of the relationship.

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