

with Karnes, et al.<sup>(49)</sup> that serologic tests may be positive in patients with gastric atrophy, in which the number of *H. pylori* organisms is so small as to be undetectable by biopsy methods.

Further, the presence of *H. pylori* was also diagnosed by slide impression smear test, (Figure 1) shown that the morphology of the *H.pylori* observed in biopsy specimens as a helical or more strikingly curved bacteria. This finding was in agreement the other study, found that *H.pylori* usually appears as a curved or straight rod in culture, whereas stained tissue biopsy samples usually reveal a helical or more strikingly curved appearance<sup>(50)</sup>, also it demonstrates bluntly rounded ends<sup>(51)</sup>.

In recent studies, a positive relation was detected between *H. pylori* infection and some micronutrient malnutrition in adults. Serum iron, vitamin B12, folate, vitamin A, and vitamin C levels were found to be low in the presence of *H. pylori* infection<sup>(52)</sup>. A strong association was found between *H. pylori* infection and iron deficiency<sup>(53)</sup>. However, the mechanisms by which *H. pylori* infection causes iron deficiency have not been well established. A plausible mechanism that may explain the development of iron deficiency in *H. pylori*-infected subjects might be the result of the pattern of gastritis and related effects on gastric physiology, affecting the normal process of iron absorption<sup>(54)</sup>. In the current study five of seronegative infected patients showed low serum Ferritin value. This could be explained that *H. pylori* may affect iron uptake and thus deplete iron stores in persons; this finding agree with Perez-Perez and Israel<sup>(49)</sup>, reported that *H. pylori* may cause iron deficiency anemia by competing with the host for iron absorption. Iron is an essential growth

factor for all bacteria, including *H. pylori*, which contains a system of iron-repressible outer membrane proteins that may be involved in iron uptake as well as a system for intracellular storage of iron that consists of the ferritin-like molecules Pfr and NapA<sup>(49)</sup>.

Furthermore, the results in (Figures 2 and 3) showed that the percentage of low serum ferritin were found more commonly in female infected patients with age group of 21-30years . These results corresponding with the other studies that; an epidemiologic study of Australian women showed significantly lower ferritin levels in women with *H. pylori* infection compared to non-infected controls despite similar dietary iron intake<sup>(27)</sup>, also Atherton *et al.*<sup>(55)</sup> they proposed that measurement of *H. pylori* density in gastric mucosa may be useful in determining the severity of infection and its influence on histologic changes and clinical outcomes.

In conclusion, the present results show that *H.pylori* positive results with URUT and slide impression smears test of the biopsy samples in the majority of infected patients indicates that, it has true a potential in aiding the diagnosis and management of patients with active *H. pylori* infection; as well as, the possible relationship between mucosal *H.pylori* loads with low serum Ferritin level.

### References

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