

Relationship between blood groups and ulcers: Revisiting the pioneer work

Madam, the relationship between blood group O and peptic ulcer was proposed initially by Alexander in 1921. This first proposition led to various researches being conducted on this very association.

Amongst the pioneer researches on blood group O's association with peptic ulcer, the work by Aird and colleagues¹ showed that people with blood group O are 35% more likely to be diagnosed with peptic ulcer than those with other blood types.

The results of the work done by Roberts et al. also showed that the incidence of duodenal ulcer was 1.38 times in people belonging to blood group O as compared to those having other blood groups. The researcher believed that duodenal ulcer is 40% more common in people with blood group O as compared to other blood groups.² Another report concluded the existence of a greater number of individuals with blood group O suffering from gastric ulcer as compared to people of other blood groups.³

More rigorous investigation into the relation led to the observation that some people secrete ABH antigens in their body fluids. Further research proposed that people belonging to blood group O might be producing a greater amount of hydrochloric acid which could be a cause of duodenal ulcer in future.⁴

Later, it was found that in people with blood group O, there was increased binding of *Helicobacter pylori* to the epithelial cells. It was concluded that denser colonization of epithelial cells and increased inflammatory reactions as a result of bacterial binding in group O people might be one reason that this population is more prone.⁵

The findings of an Iraqi study showed higher frequency of peptic ulcers in group O people. It was 41.8% in seropositive patients with comparatively lesser ratio in other blood groups.⁶

A study looking into the mechanism of this association showed that serum-pepsinogen level was found to be greater for individuals with blood type O than blood type A. It is believed that the variation in quantity of serum-pepsinogen is in relation to the size of gastric secretory-cell

mass. It is hypothesized that blood group culminates the development of secretory cell mass, reinforcing that gastric-peptic cell mass is larger in group O. This might be one of the reasons why blood group O is more susceptible to ulcers.⁷

In the work by Johnson and associates, a complication observed was relating blood groups and acid secretion to duodenal and gastric ulcers since considering the two differently, and in combination, showed different results. It was discovered that those who had combined gastric and duodenal ulcers were of hypersecreting type whereas those suffering from only gastric ulcer were of minimal secreting type, thus the group O preponderance in apparently the gastric ulcer patients was all a consequence of having combined lesions instead.⁸

Most of the investigations conclude presence of a relation but fail to establish causality with absolute certainty which led to criticism. To prove this association, further in-depth research into the mechanics and causes of ulcer are required.

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