



DETERMINATION THE ASSOCIATION BETWEEN ABO BLOOD GROUP AND GASTRIC ULCER

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Article history:	Abstract:
Received: 4 th October 2023 Accepted: 3 rd November 2023 Published: 6 th December 2023	The aims of this study were to determine the association between ABO blood groups and gastric ulcer and evaluate the levels of serum gastrin and plasma leptin in patients at the General Basrah Hospital. Peripheral blood samples of all subjects were collected for ABO blood group, serum gastrin and plasma leptin estimation. There were significant statistical results related to the blood groups to be considered as a risk factor with P-value < 0.05. There was significant increase in serum gastrin in group 2 compared to the control group. On the other hand, there was significant decrease in serum Leptin in group 2 on comparison to the control group. Patients were use NSAID.

Keywords:

INTRODUCTION

Gastric ulcer is an imbalance of hydrochloric acid secretion and stomach mucosa which defies hydrochloric acid digestion. Gastric ulcer indicates an acute medical problem (1). Ulcer may obvious in duodenum, stomach, oesophagus and the jejunum, it could likewise develop at the margin of Zollinger-Ellison syndrome or in a gastroenterostomy (2). Stomach acid levels are highest in persons with Type O blood group and lowest in those with Type A blood type (3). As a result, Type O individuals need to consume a lot of animal protein, while Type A individuals need to consume less (4). Red meat is difficult for Type A blood group members to stomach, but they may readily digest fish or chicken. Following its breakdown in the stomach, food proceeds to the small intestine for further digestion in an alkaline environment (5). Numerous blood group-based antigens have an impact on the small intestine's enzyme secretion or activity. Compared to other blood types, those with Type A blood have a higher concentration of enzymes for the breakdown of carbohydrates. This is in addition to their low stomach acidity, which allows them to survive on a diet higher in beans and lower in meat when compared to other blood types (6). The largest portion of water is absorbed by the colon, or big intestine. As a result, it needs a lot of fiber to give its substance bulk. Food's insoluble fiber functions as a sponge to absorb liquids and facilitate food's transit through the digestive system. Conversely, soluble fiber aids with the smooth expulsion of toxins by binding to them in the digestive system and softening the stool. In addition to the categorization of fiber as soluble or insoluble, each person has a unique fiber makeup. Fiber is indigestible to the human body, however it is readily digested by the intestinal microbiota. The person's blood type determines the gut microbiota (7). Bloating and flatulence may result from consuming the incorrect kind of fiber. According to some research, individuals with Type O blood did not get stomach ulcers (8).

METHODS

The study was involved 267 subjects, with age range (20 – 65) years at the General Basrah Hospital and were exposure for endoscopy to detect gastric ulcer. Out of 267 subjects 138 were healthy (Group 1: control group, while 129 with gastric ulcer. Blood samples of all subjects were collected. The samples were transferred to 5ml tubes, and kept in EDTA-coated tubes for blood group, serum gastrin and plasma leptin analysis.

RESULTS

There is a connection between stomach ulcers and ABO blood types. Type "O" is more likely to develop stomach ulcer disease, while type "AB" is less likely to do so. The blood type O had the greatest positive infection result (59.3%), whereas the blood group AB had the lowest result (34.8%). As shown in (Table 1), there were statistically significant findings for the blood types to be taken into consideration as a risk factor with P-value < 0.05.

Table1: Blood groups distribution in gastric ulcer patients.

Blood group	Group 1 (control) n (%)	Group 2 n (%)
A	45(56.3)	35(43.8)
O	44(40.7)	64(59.3)
AB	15(65.2)	8(34.8)
B	34(60.7)	22(39.3)

In comparison to the control group, group 2's serum gastrin level increased significantly. Conversely, group 2's blood leptin levels were significantly lower than those of the control group, as shown by Table 2.

Table 2: Effect of gastric ulcer on serum Gastrin and plasma leptin.

Variables	Group 1 (control)	Group 2
Gastrin (ng/L)	71.00 ± 1.91	120.11 ± 3.96*
Leptin (ng/L)	6.51 ± 0.93	4.91 ± 0.77

DISCUSSION

The findings show a correlation between the "ABO" blood types and stomach ulcers, with type "O" showing a greater propensity for illness and type "AB" showing no symptoms. The results of this investigation corroborate the epidemiological theory that blood type "O" is more susceptible to stomach ulcers, whereas blood group "AB" is less susceptible (10). Two distinct kinds of antibodies, Type A and Type B, make up blood type O. Given that most prevalent illnesses have distinct markers (antigens) that excite various blood types, it was thought that having these particular antibodies in the blood gave a survival advantage. Therefore, what was formerly thought to be a transfusion-related problem was rather identified as a protective factor in individuals with Type O blood type. However, the health of the populace may also be impacted by this intrinsic immunity. The numerous kinds of ulcers compared to individuals from different blood groups. Type O blood group carriers are more likely to develop certain illnesses, such as ulcers or thyroid issues. Compared to those from other blood groups, these individuals had a 2-fold increased risk of developing different kinds of ulcers (4). Those with Type O blood also have the ability to digest meals high in fat or protein. This is another distinctive quality. This is due to the fact that the digestive tracts of these individuals produce a much larger quantity of lipoprotein ApoB48 and alkaline phosphatase, two important components needed for the digestion of fats and proteins (6). These ingredients support better absorption of calcium, healing of the digestive system, and cholesterol metabolism in animal products. Simple carbs from grains, however, are quickly transformed into fats and triglycerides in these individuals. Most grains include certain lectins, which are reactive proteins that stimulate the immune system and may lead to increased inflammation or autoimmunity. Stomach acid levels are highest in persons with Type O blood type and lowest in those with Type A blood group. As a result, Type O individuals need to consume a lot of animal protein, while Type A individuals need to consume less (4). Red meat is difficult for Type A blood group members to stomach, but they may readily digest fish or chicken. Food travels to the small intestine, where it is digested in an alkaline environment, after being broken down in the stomach. The findings demonstrated that stomach ulcers may raise blood levels of gastrin in circulation. According to Yun et al. (2014), it is uncertain whether the hypergastrinemia that develops in individuals with gastric ulcers is caused by the ulcer itself, chronic gastritis, suppression of somatostatin, hypochlorhydria, or gastric atrophy. The lower level of serum leptin in ulcer patients may be caused by a greater degree of antral atrophy or intestinal metaplasia in comparison to healthy individuals.

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