WWJMRD 2018; 4(4): 45-47
www.wwjmrd.com
International Journal
Peer Reviewed Journal
Refereed Journal
Indexed Journal
UGC Approved Journal
Impact Factor MJIF: 4.25
E-ISSN: 2454-6615

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Incidence of Helicobacter Pylori Infection in ABO Blood Group System

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Abstract
Helicobacter pylori infection is a high prevalence infection, which is common in most of the developing countries. The infection leads to chronic gastritis, peptic and gastric ulcers. The aim of the present study was to evaluate the role of Helicobacter pylori infection in ABO blood system. The study was conducted by forward grouping method and the results revealed that the O blood group individuals are more susceptible to this particular infection.

Keywords: Helicobacter pylori, ABO blood group system

Introduction
The ABO blood group antigens remain of prime importance in transfusion medicine since they are the most immunogenic of all the blood group antigens. The ABO blood group antigens also appear to have been important throughout our evaluation because the frequencies of different ABO blood types vary among different populations. People with the common blood type O express neither the A nor B antigen, and they are perfectly healthy. Numerous associations have been made between particular ABO phenotypes and an increased susceptibility to disease [1].
Helicobacter pylori (H.pylori) are a spiral bacterium which lives within the mucosal layer of the stomach and duodenum. The presence of H.pylori in the gut may result in server health problems although as many as 80% of infected individuals will never present with clinical symptoms. Infection has been shown to occur between family members however it is very rare to catch H. pylori as an adult, most people are infected during childhood[2].

Materials and method
This prospective study was conducted for a period of 3 months in the gastro intestinal department in a tertiary care hospital in Kannur district of Kerala state. Individuals suffering from peptic ulcer between the age group 25-50 were included in the study and aged individuals and children were exempted. A total number of 30 samples were evaluated by forward grouping technique.

Forward grouping method
Anti-A and Anti-B blood grouping serum were taken in separate tubes. These tubes were centrifuged at 1500 revolutions per minutes, after adding 5% cell suspension. The cells were re-suspended thereafter by gentle agitation and agglutinations were observed microscopically[3].

Results and Discussion
Even though forward grouping method includes various techniques like; slide test, tube test, and gel system, micro plate technique and glass micro bead method, tube technique is carried out in this study because it is easy to perform and avoids drying effect. We can also enhance the antigen antibody reaction in this method by centrifugation. The result obtained by this method is most reliable as it is capable of detecting a weaker antigen antibody reaction. The

tube method followed here is mainly based on the principle of agglutination. Normal human red cells possessing antigen will clumps in the presence of antibody[3]. The distribution of the ABO blood groups of the patients was O (40.5 %) followed by A (30 %), B (21 %) and AB (8.5 %), while 93% of patients were Rh positive and only7% of patients are Rh negative. The ABO blood group system is the most important in human blood transfusion. Some epidemiological studies have shown a relationship between H. pylori infection and ABO and Lewis blood groups [4-7] however, these studies have not reached a consistent conclusion regarding the nature of this relationship [8-11].

Table .1: Interpretation of forward grouping

Blood Group	A -Cell	B-Cell	O-Cell
A	No agglutination	Agglutination	No agglutination
B	Agglutination	No agglutination	No agglutination
O	Agglutination	Agglutination	No agglutination
AB	No agglutination	No agglutination	No agglutination

Table .2: Percentage distribution of blood groups

Blood Groups	% distribution
A	30
B	21
O	40.5
ABO	08.5

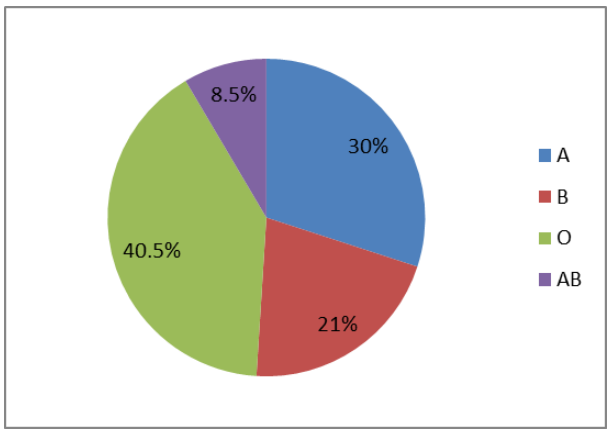

Fig .1: Showing percentage distribution of blood groups

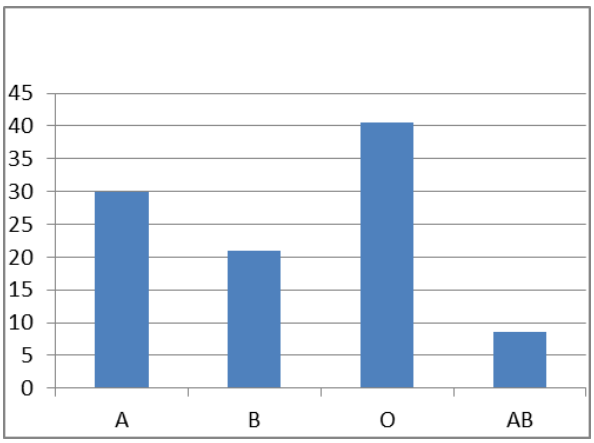

Fig .2: Showing percentage distribution of blood groups

This system is used as a genetic marker in studies of associations with infectious and non-infectious diseases [12]. The ABO blood group antigens confer advantage of resistance against certain infectious disease[13]. The risk of gastric cancer was found to be higher in those with the blood group A and the occurrence of gastric ulcer was more common in persons with O blood group[14-16]. The results of this study showed that there was a significant association between ABO blood groups and H. pylori infection, in which, persons with O blood group has a greater tendency towards infection.

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