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## The relationship between Rh and ABO Blood Groups distribution and the incidence of gastric cancer and peptic ulcer disease: Case-control study

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**Statement of the Problem:** In 1953, Aird *et al.* found an association between blood group A and gastric cancer, and between blood group O and peptic ulcer disease (PUD). Further research demonstrated relationships between ABO blood groups and some diseases. No studies included Rh blood groups in the analysis. There is a controversy among studies investigating the association of ABO blood groups with gastric cancer and PUD. This study aims to investigate the relationship between Rh and ABO blood groups and the incidence of gastric cancer and PUD. To our knowledge, this is the first study that includes Rh blood groups in the investigation.

**Methodology:** We chose case-control design. Participants underwent esophagogastro - duodenoscopy (EGD) during 2016 and 2017 in Aleppo University hospital. We did ABO and Rh typing for all participants. Biopsies were done when indicated. We formed four case groups: benign PUD group (n=276), benign gastric ulcer group (n=125), benign duodenal ulcer group (n=169), gastric cancer group (n=26). The control group (n=276) consisted of participants whose EGDs were normal or revealed only gastritis or duodenitis. We used ODDs Ratio with 95% confidence interval and P-value to evaluate statistical significance of differences between groups.

**Findings:** There is no significant relationship between Rh blood groups and gastric cancer or PUD. There is no relationship between ABO blood groups and PUD. There is an increased risk of gastric cancer among blood group A. Non-A groups revealed no significant risk. 100% of biopsies showed *H. pylori*.

**Conclusion:** After comparing our findings to available literature, we suggest larger-scale studies to investigate the association of non-A groups with gastric cancer, and Rh groups with gastric cancer and PUD. We recommend studying the feasibility of establishing screening programs for gastric cancer in people with blood group A. We should determine the prevalence of *H.pylori* infection in Syria.

### Recent Publications:

1. Manal K. Abdulridha. "The Relationship between ABO Blood Group Distribution and the incidence of Upper Gastric and Duodenal Ulcer in Iraqi Patients" Iraqi J Pharm Sci, Vol. 22(1) 2013.
2. Zhiwei Wang, ABO Blood Group System and Gastric Cancer: A Case-Control Study and Meta- Analysis, Int. J. Mol. Sci. 2012, 13, 13308-1332.
3. Franchini M, Favaloro EJ, Targher G, Lippi G. ABO blood group, hypercoagulability, and cardiovascular and cancer risk. Crit Rev Clin Lab Sci 2012; 49: 137-49.
4. Edgren, G.; Hjalgrim, H.; Rostgaard, K.; Norda, R.; Wikman, A.; Melbye, M.; Nyren, O. Risk of gastric cancer and peptic ulcers in relation to ABO blood type: A cohort study. Am. J. Epidemiol. 2010, 172, 1280–1285.
5. A.I. Sharara a, H. Abdul-Baki, ElHajj, Association of gastroduodenal disease phenotype with ABO blood group and Helicobacter pylori virulence-specific serotypes. Digestive and Liver Disease 38 (2006) 829–833.

### Biography

Ziad Aljarad has a master degree in gastroenterology and Hepatology from Aleppo University. He is interested in clinical research. He has four published research papers and a published book. He is also interested in teaching principles of clinical research to medical students. He has participated in many research activities and conferences, and he is a member of Continuous Medical Learning and Research Center (CMERC) in Aleppo University. He is also interested in Humanitarian work. He was the coordinator of health care in the Syrian Arab Red Crescent- Aleppo Branch, and now he is the National Professional Officer for TB, HIV and Hepatitis in the World Health Organization (WHO).

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