

ORIGINAL ARTICLE

CORRELATION OF ABO BLOOD GROUP AND APHTHOUS ULCERS – AN EPIDEMIOLOGICAL STUDY

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ABSTRACT:

Objective: The present study was undertaken to determine whether there was a correlation between aphthous ulcers and ABO blood groups. **Materials & Methods:** This epidemiological study was carried out on 200 subjects who reported in the department of oral medicine and radiology for dental treatment. The blood group of the patients with aphthous ulcers was analyzed. **Results:** The findings of our study revealed that there was non-significant correlation between the occurrence of aphthous ulcers and the patient's blood group. **Conclusion:** Further research with larger study group is required to find a correlation between blood group and occurrence of aphthous ulcers.

Keywords: ABO blood system, aphthous ulcer

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INTRODUCTION

Landsteiner was the first to describe the existence of serologic difference between individuals, and classified people into four groups depending on whether their RBC cell membrane contained agglutinin (antigens) "A," agglutinin "B," neither A nor B (group O) or both A and B (group AB).¹ ABO blood group system plays a significant role in areas beyond transfusion and transplantation, for example it determines many of the immunological characteristics of the body.² e.g. Blood group A individuals have more tendency for occurrence of gall stones, colitis and tumors of salivary glands, pancreas as well as ovary.³ Framingham showed that the ischemic heart disease occurrence might be higher in subjects with blood group A.⁴ ABO blood groups have also been found to be associated with disease entities, such as pulmonary tuberculosis, leprosy, syphilis, malaria, coronary artery disease, diabetes mellitus.⁵

One of the common problem with which patient's report to oral health care centre is oral ulceration. Oral ulcers are prevalent in worldwide with a prevalence rate of 4 %, out of which the most common is the aphthous ulcers affecting approximately 25% of the population worldwide.⁶ Greek word "aphthae" means ulceration.⁷ Hippocrates first used this term and later described by Mikulicz and Kummel as 'Mikulicz's aphthae'.⁸ Clinical presentation includes multiple, small, round, or ovoid ulcers, with circumscribed margins, covered by a yellowish or gray-white fibrinous exudates and surrounded by an erythematous halo, and present first in childhood or adolescence.⁷ Clinical symptom includes intense or moderate pain followed by which the ulcers heal in 10-14 days for the more common type and more than 2 weeks for the severe type. Recurrence of the ulcers occurs in intervals within a year or over several years.⁹ The etiology of recurrent aphthous stomatitis is still unclear but

both environmental and genetic factors are indicated.^{10,11} None of the etiologies has been validated.

In view of the following conflicts, the present study was carried to find correlation of ABO blood grouping and aphthous ulcers.

METHOD & MATERIALS

The present study was conducted at Oral medicine and radiology dept. of Rungta Dental College Bilai, Chattisgarh. The study sample included 200 patients (100 males), (100 females). The patients having any systemic illness or disease were excluded from the study. Written consent of the patients was obtained and the patients were made aware of each and every procedure of the study. Ethical approval was also taken from the institution.

Blood samples were taken by a sterile finger prick with a disposable needle of the patients with aphthous ulcer and blood grouping and Rh factor examination was done by the slide method. The number of participants in each study groups and their ABO blood groups were tabulated. The percentage distribution was calculated in both. The persons with negative history of aphthous ulcers were taken as healthy subjects. Collected data was coded, compiled and tabulated. The data was analyzed by applying descriptive and inferential statistical analysis. Analysis was carried out using SPSS package version 17.

RESULT:

The present study was conducted to access the relationship between aphthous ulcer and ABO blood group system. A total of 200 participants from private dental college were included in the study population.

TABLE 1: Distribution of subjects according to Blood Group with Aphthous Ulcers

Blood Group	Males	Females	Total	p=0.256
O	28	23	51	Non-significant
A	27	25	52	Non-significant
B	25	28	53	Non-significant
AB	20	24	44	Non-significant

DISCUSSION:

Aphthous stomatitis is a very common, recurrent painful ulceration affecting the general population. With still questionable etiopathogenesis, treatment strategies mostly aim of providing symptomatic relief by pain relief and increasing the duration of ulcer-free periods. The pain problem of lacking a

definite treatment and limited knowledge may be due to fact that a majority of the patients with aphthous ulcers donor actually report to the dentist.¹²

Thus, the focus of determining the disease susceptibility changed to genetics. However, the studies investigating the relation between ABO blood grouping and aphthous ulcers are limited.

In the present study population there was highest prevalence with O group and the least with AB group. But the results were statistically non-significant. Further the disease was more prevalent in females but we couldn't find any correlation between them. The identification of this particular association may open new arenas in the prevention and treatment of aphthous ulcers.

Vivek S and Gawrzewska founded greater propensity for periodontal disease among O blood group individuals while the least among AB blood group individuals.¹³ Studies quote blood group "A" prevalence more frequent in patients with gastric, laryngeal, hypopharynx, pancreatic, breast, testicular, and bone cancers.¹⁴

Literature quotes that Blood-group antigens can be present on key receptors controlling cell proliferation, adhesion, and motility, such as epidermal growth factor receptor, integrins, cadherins, and CD44. although their role in human cancer is quoted in literature, their function in normal stratified oral epithelium is unclear.¹⁵ Although prevalence of blood groups have been quoted in literature, studies of the relative incidence of the ABO blood group in different lesions have failed to provide a unifying and testable hypothesis as to the basis for the associations observed. Hence, we emphasize on considering blood group types together with other risk factors in various oral lesions including aphthous ulcers.

CONCLUSION:

Even though O blood groups dominated among aphthous patients, no significant results could be founded. Further research with larger study group and more number of parameters are required so that role of ABO blood group in the etiopathogenesis of the disease could be clearly understood and definite treatment therapy could be established.

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