

Incidence of cataract in ABO blood group system

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Abstract

Background and objective: Association of various diseases with blood group exist in literature. We, therefore, like to investigate whether cataract has any relationship with the blood groups and there by inheritance. **Material and method:** Cataract patients were 293 and controls were 23,005 who are randomly selected were examined by hemagglutination rapid slide technique and the results were compiled, compared with each other and a conclusion was drawn. **Results:** there was no significant difference was seen between the two groups. **Conclusion:** It was found that there was no significant difference observed between the different blood groups among the patients and the controls group.

Key Words: blood group, cataract.

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considered as the major and clinically significant blood group system.¹ Apart from the importance of ABO antigens in blood transfusion, the ABO blood group system has been associated with several diseases. Several studies have reported the association of ABO blood groups with diseases which is shown in Table 1. The Aim of the study is herein an attempt has been made to determine the incidence of cataract in different ABO blood groups and thereby genetic involvement. In this study 293 cataract patients were investigated for their blood group by haemagglutination rapid slide technique and the frequency of which in different ABO blood groups was found out and compared with those of 23,005 normal controls.

INTRODUCTION

Karl Landsteiner was the first person to discover the ABO blood group system in 1901.¹ The ABO antigens are

Table 1:

Disease associated	Type of associated risk	Blood group
H. Pylori infection and		
G.I ulceration ^{2,3,4}	High	O
Gastric carcinoma ⁵	High	A
Lung cancer ⁶	High	B
Breast cancer ⁶	High	O
Cervical cancer ⁶	High	B,O
Venous thromboembolism ⁷	High	A,B,AB
Ischemic heart disease ⁸	High	AB
Otitis media with effusion ⁹	Low	O

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MATERIAL AND METHODS

A cross-sectional study was conducted in Ophthalmology outpatient department of Mamata Medical College. Selection of cases was done randomly selecting cataract patients from the patients attending Ophthalmology OPD of Mamata Medical College Khammam, Telangana and the controls were selected randomly from the general population of Khammam, after their complete eye check-up served as control. The blood group of these individuals were determined by haemagglutination rapid slide technique using monoclonal Anti-A and Anti-B having a titer of 256. In total 293 cataract and 23,005 normal control individuals were investigated. The diagnosis of age related cataract was based on history taking, clinical examination and fundoscopic examination. Only proven cataract cases had been taken for the study and the cases with any other eye related complaint had been excluded from the study. The study was approved by human ethical committee of Mamata Medical College Khammam, Telangana, as well as the selected cases were first explained the purpose of this study and the willing cases had been included in the study before any further proceedings was done. After compiling the results the observed difference in cataract patient was compared with the controls were statistically analysed to find out the level of significance using SPSS software $p < 0.05$ is considered as significant.

RESULT

Table 2: Incidence of ABO blood group in a series of 23,005 Cataract patients and 293 Controls

Blood Groups	Patients	Control
A	28 (10%)	2626 (11%)
B	121 (41%)	8949 (39%)
AB	09 (3%)	920 (4%)
O	135 (46%)	10,510 (46%)
TOTAL	293	23,005

DISCUSSION

From table 2 it is quite evident that there is not much difference seen in cataract patients in any of the blood groups and after statistically comparing we found the results were statistically not significant, i.e., $p > 0.05$. So it appears that inheritance of ABO genes are not related to occurrence of cataract. In other words, cataract is not genetically inherited. It may be the ageing process only.

CONCLUSION

There is non – significant rise in number of cataract patients in any ABO blood groups. So it seems that cataract is only because of aging process.

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