

FREQUENCY OF ANTITOXOPLASMA ANTIBODIES IN PATIENTS WITH OCULAR PATHOLOGY

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Background: Toxoplasmosis is a worldwide disease caused by *Toxoplasma gondii*. This disease is prevalent in many parts of the world including Pakistan. Besides other conditions, ocular diseases are also caused by it. Immune response is mounted against this protozoon in the form of antibodies which are detectable in patient's serum. The present study estimated the seroprevalence of antitoxoplasma antibodies in patients with ocular diseases. **Methods:** One hundred patients of either sex and age were studied at the ophthalmology units of Jinnah Postgraduate Medical Centre and Lyari General Hospital Karachi. Antitoxoplasma antibodies, both immunoglobulin G and M (IgG & IgM) were detected in the sera of these patients by the recommended methods. **Results:** Seroprevalence of antitoxoplasma antibodies was highest (60%) in age groups 21 to 40 years. It was seen in either sex but was found to be more common in females. **Conclusions:** Further studies with improved diagnostic techniques on larger samples are needed to diagnose and treat toxoplasmosis in acute stage in order to minimize the deleterious effects it has on different tissues and organs of the body.

Keywords: Antitoxoplasma, Antibodies, Ocular

INTRODUCTION

Toxoplasmosis is a zoonotic disease caused by *Toxoplasma gondii*. A wide range of animals are infected by this protozoon. Human infection is acquired from the infected animals and birds. In Human, transplacental infection also occurs.¹ Besides many other clinical conditions, diseases like chorioretinitis, posterior uveitis, cataract, glaucoma, optic neuritis, squint and enophthalmos are important ocular pathologies seen both in acquired and congenital toxoplasmosis. If not detected and treated in time it may cause permanent blindness. Different studies have been conducted on toxoplasmosis in different parts of the world including Pakistan covering various aspects of this important Public Health problem.⁴⁻⁷ The present study covers the serological aspect of toxoplasmosis in different ocular pathologies.

The purpose of this study was to determine the seroprevalence of antitoxoplasma antibodies in patients with ocular pathology.

MATERIAL AND METHODS

One hundred consecutive patients of either sex and age suffering from eye diseases were randomly selected from Jinnah Postgraduate Medical Centre (JMPC) and Lyari General Hospital (LGH) Karachi. After recording general particulars, every patient was interviewed for history of present and past illnesses, family, socioeconomic, occupational history, history of contact with animals and ocular complaints in detail. A thorough examination of both eyes was also done. General physical examination and relevant systemic examination was done and findings were recorded on a proforma. After history and examination, 5 ml venous blood was taken from each patient under strict aseptic conditions and serum was extracted after clot formation with a centrifuge machine at 3000 revolutions per minute (rpm). The serum was stored in clean capped bottles at 20°C. For detection of IgG and IgM, LabSystem Helsinki, Finland was used. LabSystem kit for indirect solid phase immunoassay was used for the analysis of antitoxoplasma antibodies. Positive & negative controls were also run with the test sample to

ensure quality control. For IgM Positive cases confirmatory kit was used (Labsystem IgM R/C confirmatory kit 6106010).

RESULTS

The results of our study are as shown in tables 1 and 2.

Table-1: Toxoplasma antibodies in patients of different age groups with ocular pathology

Age in years	No. of cases tested (n=100)	Positive (n=49)
< 20	14	2 (14.3%)
21 – 40	25	15 (60%)
41 – 60	48	25 (52%)
>60	13	7 (53.8%)

Table-2: Gender distribution of seropositive patients with different ocular diseases

Sex	No. of cases tested (n=100)	Positive (n=49)
Male	44	18 (40.9%)
Female	56	31(55.3 %)

DISCUSSION

It is clear from table-1 that seroprevalence of antitoxoplasma antibodies was highest in age group 21- 40 years (60%) this is slightly different from the results of earlier studies showing a steady increase in seropositivity with increasing age.^{8,9} The reason might be that in this study both IgG and IgM were tested while in the earlier study IgG was studied exclusively on a larger sample size.

Females showed higher seroprevalence of antitoxoplasma antibodies as compared to males with male to female ratio being (1:1.35). This is similar to the findings of earlier researchers.¹⁰The reason of female preponderance is not exactly known. Human presence of antitoxoplasma antibodies in females with ocular diseases in their reproductive age group has twofold effects. It can adversely affect the female causing permanent blindness. Secondly, it can be transmitted transplacentally to the babies causing abortion or congenital abnormalities in those born alive.

Further studies with improved diagnostic techniques on larger samples would be highly appreciated to diagnose and treat toxoplasmosis in acute stage in order to minimize the deleterious effects it has on different tissues and organs of the body.

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