



ORIGINAL RESEARCH PAPER

Clinical Microbiology

PREVALENCE OF ASO ANTIBODIES AMONG SUSPECTED PATIENTS FOR STREPTOCOCCAL INFECTIONS AT DHIRAJ HOSPITAL, PIPARIA, VADODARA.

KEY WORDS:

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INTRODUCTION:

Streptococcus pyogenes is most common and ubiquitous human pathogens. That causes a wide spectrum of infections, which are acute pharyngitis and impetigo. Many Other manifestations of infection with Group a Streptococcus include otitis, peritonsillar abscess, sinusitis, erysipelas, scarlet fever and cellulitis and soft tissue infections necrotizing fasciitis and myonecrosis¹⁻⁴. It is also associated with non suppurative sequelae 1- acute rheumatic fever, 2- acute glomerulonephritis⁵.

Susceptibility to rheumatic fever in certain individuals has been depending on the number of factors that include genetic determinants, presence of certain markers such as the B-cell alloantigen & HLAs⁶.

Two tests to detect recent streptococcal throat infection ,1st positive culture for group A Streptococcus from the throat or 2nd anti-streptococcal antibody tests. In many cases Throat cultures are spontaneously negative due to previous antibiotic treatment or may be positive due to carriage state⁷. Throat culture are Positive only in about 11% at the time of presentation of acute rheumatic fever and presence of organism in the throat can be also indicate carrier state which is seen in 2.5- 35.4% of that individuals. In many cases the presence of immune response of host is evidence of the recent streptococcal infections⁸.

Streptococcal infections can be diagnosed by Three streptococcal antibody tests.

1. The antistreptolysin O titre (ASO),
2. The antideoxyribonuclease-B titre (anti-DNAase-B, or ADB),
3. The streptozyme test^{10,11}.

Most standardized serological test that is ASO. Useful in diagnosis of streptococcal infections and complications, also in follow-up process & evaluating effectiveness of the treatments. The test measures the ability of serum that neutralize streptolysin O¹².

MATERIAL AND METHODS:

The study was conducted in serology section of Microbiology laboratory, Dhiraj Hospital, Vadodara between the periods of January 2022 to June 2022. Samples were received in serology section of microbiology laboratory requested for Anti streptolysin O test were tested by ASO- latex slide agglutination test by BEACON Diagnostics. The samples were centrifuged at 3000 rpm for 2 minutes. Serum was then separated by using micropipette. Total 740 serum samples were tested for ASO latex slide agglutination test.

Before testing, test serum and kit reagents were kept at room temperature. The 25 µl of patient's serum within the circled area were placed on the clean & dry special glass slide provided in the kit. Drop of well mixed ASO latex reagent added to the serum. The reagent and serum were mixed by the applicator stick. The slide was rotated and the

agglutination observed after 2 minutes^{13,14}. The Results were compared with positive control & negative control. The titer of ASO in test samples was indicated by corresponding value in IU. The ASO titer more than 200 IU was considered significant.

RESULTS:

The 740 serum samples were processed for detection of Anti Streptolysin O antibodies. As shown in figure-1, 20 samples were positive and 720 samples were negative. Total prevalence for ASO positive serum samples were 20(2.7%) for Anti Streptolysin O antibodies.

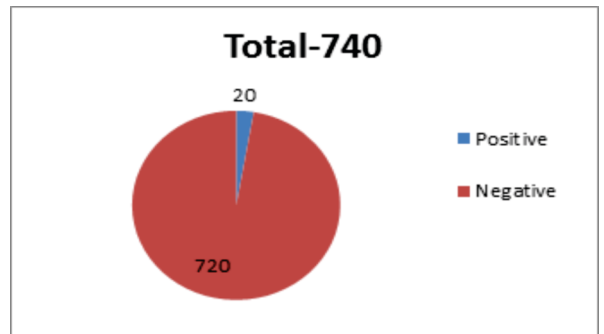


Fig-1: Total No. of ASO positive and ASO negative cases.

The number of positive cases in the different age group shown in table 2. In (0-20) year of age total 256 samples received, out of this 12 samples found positive for ASO antibody, prevalence rate 4.6%. In (21-40) year of age total 287 samples received, out of this 8 samples found positive for ASO antibody, prevalence rate 2.7%. In (41-60) year of age total 155 samples received, no positivity found in this age group. In more than 60 year of age total 42 samples received, no positivity found in this age group. The highest prevalence of ASO antibody positive samples were 12 samples out of 256 samples (4.6%) found in age group of (0-20 years). Very low prevalence found in age group of 21-40 years which is 8 positive serum samples for ASO antibody out of 287 total samples. The prevalence rate declines as age increases, so it is more prevalent among younger age group.

Table-2: The number of positive cases in different age group

Age group (years)	No. of samples	No. Of Positive	Prevalence
0-20	256	12	4.6%
21-40	287	8	2.7%
41-60	155	0	0%
>60	42	0	0%

DISCUSSION:

Serological test for streptolysin O antibodies is used for aid to the diagnosis of post- streptococcal non-suppurative sequelae such as acute rheumatic fever & glomerulonephritis¹⁵⁻¹⁶.

Our study showed that from total 740 samples tested 46 samples were found ASO positive, prevalence rate for ASO

was 2.7%, whereas the same study which was conducted in Nepal showed 45.45 % prevalence of ASO positive cases¹⁷. The Similar study was also performed where 20.89 % prevalence was observed of ASO positive cases¹⁸. Our study showed that the highest prevalence 4.6% of ASO antibody found in age group of (0-20 years), Where the same study which was conducted in Bhadrak region showed that the highest prevalence 27% of ASO antibody was found in age group of (21-40 years)¹⁹. That clearly indicate the ASO level vary with age group of the study population & geographical distribution.

CONCLUSION:

The estimation of ASO antibodies is a simple, cost effective way & test report can be given rapidly and test is correlated with clinical finding for routine diagnostic work. It is useful without depending upon the other test. The prevalence of Anti streptolysin O (ASO) antibody in this study among total cases was 2.7%. The prevalence of ASO was found to be the highest in the age group (0-20) year. As the data studied here is not enough for the making any conclusion on prevalence of ASO in a particular age, so need to do more studies on prevalence of ASO in different population is required.

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