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ORIGINAL ARTICLE

STUDY ON BACTERIOLOGY OF TONSILLITIS IN A HOSPITAL

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ABSTRACT: OBJECTIVES: Tonsillitis affects all age groups especially children. Our aim is to find out the main causative agents responsible for causing tonsillitis. **METHODS:** The study was performed on 152 patients who come with sore throat as chief complaint. Swabs were taken from surface of palatine tonsil and cultured. **RESULTS:** Isolates were identified and susceptibility test were performed. Out of 152 cases, 58(38.15%) showed growth. Among positive cultures 52 (89.65%) were less than 12 years and 6 (10.34%) were more the 12 years. Strains showed high sensitivity to cefotaxime. Staphylococcus aureus was the most common isolate cultured in both age groups. **CONCLUSION:** Out results demonstrate that Staphylococcus aureus is a common isolate that causes tonsillitis is all age group. Frequency of pathogens decreased with age. Strains showed lowest sensitivity against penicillin.

KEYWORDS: Tonsillitis, tonsils.

INTRODUCTION: Tonsillitis is a common condition encountered at childhood. The inflamed tonsils harbor many types of bacteria.[1] Recent criteria have defined severe tonsillitis as: five or more episodes of true tonsillitis a year and symptoms for at least one year.[2] Previously, Chronic tonsillitis was totally a clinical consideration but presently bacteriological and patho-anatomical concept are more emphasized[3] Chronic tonsillitis is a clinical condition which includes repeated attacks of infection.[1] Inappropriate usage of drug against the pathogens found in deep tonsillar tissue helps the pathogen in continuation of infection.[4] In our study Staphylococcus aureus was the predominant species in tonsillitis patients. S. aureus shows broad variety of virulence factors, especially adhesins or "microbial surface components recognizing adhesive matrix molecules" (MSCRAMMS).[5]

MATERIALS AND METHODS: Patients presenting with signs and symptoms of chronic tonsillitis were enrolled for the study. This study was performed on 152 patients who come with sore throat as chief complaint. Swabs were taken from the surface of palatine tonsils with a sterile cotton-tipped applicator and then it was placed in a transport medium. It was then inoculated on blood agar, chocolate agar, MacConkey agar, thioglycollate broth and fastidious anaerobic agar. Plates were incubated for 24 to 48 hrs. Isolates were identified by biochemical test and Gram stain. Tests such as coagulase tests, DNAase tests, Optochin test, bile solubility, bacitracin test, triple sugar iron test, indole test, citrate test, urease test, oxidase, methyl red(MR) and voges - proskauer (VP) tests were done. For Haemophilus species via VX factor test were done. Susceptibility of isolates was done by Kirby-Bauer disc diffusion method on Mueller-Hinton agar. Antibiotic disc such as methicillin, gentamycin, co-trimoxazole, cefotaxime, cefexime, ofloxacin and were used. Enrollment of the cases was done on the basis of age i.e. less than 12 years and more than 12 years and sex.

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RESULTS: Total number of 152 cases was enrolled in OPD during period of January 2011 to December 2012. On the basis of age, patients were divided into two groups i.e. up to 12 years and more than 12 years. 112 cases were enrolled under 12 years and 40 were more than 12 years. Total 58 (38.15%) culture showed growth. In pediatric age group 52(89.65%) showed growth and among patients more than 12 years 6 (10.34%) showed growth. Among 82 males 35(42.6%) showed growth in pediatric age group and out of 25 adult males 4(16%) showed growth. 30 female patients were under 12 years and 15 were more than 12 years. Of them 17 female patient (56.6%) showed growth among pediatric age group and 2 (13.33%) positive cultures were more than 12 age. S. aureus was the predominant species isolated in both age group patients. Higher incidence 24 (46.15%) was seen in pediatric patients as compared to adult group 2 (33.32%). Then was Klebsiella pneumoniae, Group B streptococcus, Escherichia coli, Streptococcus pyogenes, Pseudomonas aeruginosa and Haemophilus influenzae. The isolates showed sensitivity to ofloxacin (51%) then was cefotaxime (66%) cefixime (56%). Lowest sensitivity was seen against gentamicin (25%).

DISCUSSION: The main object of this study was to find the bacteriology of tonsillitis. S aureus[4, 6-8] was the most common isolate cultured both in adult and children.[9] This is shown in table 1. Among the 112 cases in children 52 (89.65%) showed growth and among 40 cases enrolled 6 (10.34%) showed growth. Lesser pathogens were isolated with increase of age possible because of increased immunity.[10] Male patients were more in both the age group. Among 82 males 35(42.6%) showed growth in pediatric age group and among 25 males 4 (16%) showed growth in adult age group. Then Klebsiella pneumoniae, Group B Streptococcus, Escherichia coli, Streptococcus pyogenes, Pseudomonas aeruginosa and Haemophilus influenzae were isolated. Stains showed high sensitivity to cefotaxime drug [11] and lowest sensitivity to penicillin drug.[12]

CONCLUSION: S. aureus was the most offending pathogens responsible for chronic tonsillitis. Most of the stains were sensitive to cefotaxime and lowest sensitivity was seen against penicillins. Less isolates were isolated with increase of age.

Sl. No.	Organism Isolated	Isolates			
		Pediatric	Percentage	Adult	Percentage
1	Staphylococcus aureus	24	46.15%	2	33.32%
2	Klebsiella pneumoniae	12	23.07%	1	16.67 %
3	Group B. Streptococcus	7	13.46%	1	16.67%
4	Escherichia coli	3	5.78%	1	16.67%
5	Streptococcus pyogenes	3	5.78%	0	0
6.	Pseudomonas aerugenosa	2	3.84	1	16.67
7	Haemophilus influenzae	1	1.92	0	0
Total		52	100%	6	100%

Table 1: Organisms isolated from cultures

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