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EVALUATION OF ANTIBIOTIC SENSITIVITY PATTERN IN ACUTE TONSILLITIS

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Abstract

Background: Tonsillitis is a frequent condition noticed in the ENT department of every hospital. One out of every 10 children visiting the ENT OPD, suffer from acute tonsillitis.

Methods: This was a prospective observational study conducted on patients coming with a history of throat pain, pain on swallowing, fever, body ache and other constitutional symptoms.

Results: Antibiotic resistance was seen in case of the commonly used antibiotics like ampicillin, amoxicillin, Amoxicillin+Clavulanic acid. Cephalosporins were less commonly used antibiotics and showed resistance in 78.00% cases. Cotrimoxazole showed about 16.00% resistant cases. The less commonly used antibiotic was vancomycin however, showed high sensitivity (100%) followed by Linezolid (92.00%) and Clindamycin (82.00%). Erythromycin showed 76% sensitivity while ciprofloxacin showed a low sensitivity of 40.00% followed by Cephalosporins (22.0%).

Conclusion: The antibiotic sensitivity pattern could revolutionize the management of chronic tonsillitis.

Keywords: Acute tonsillitis, Antibiotics, Sensitivity

Introduction:

Tonsillitis is a frequent condition noticed in the ENT department of every hospital. One out of every 10 children visiting the ENT OPD, suffer from acute tonsillitis.[1] It occurs when the trapped organisms infiltrate the mucosal barrier and attribute themselves to the epithelial cells, leading to cytokine production and complement activation. These series of reactions produce an inflammatory reaction in the tonsillar mucosa.[2] Staphylococci and beta haemolytic Streptococci are the major organisms involved in the pathogenesis acute tonsillitis. Other pathogens involved are Group A beta haemolytic Streptococci, Klebsiella pneumoniae, E. coli. [3]

The use of antibiotics against these bacteria has been the general trend through the years. Penicillin has been the drug of choice for acute tonsillitis. Other antibiotics preferred in penicillin allergic cases include are Cephalosporin, macrolides, erythromycin and tetracycline's etc.[4]

However, over the years, there has been an emerging trend of resistance to these antibiotics among the bacteria. Recent studies have shown biofilms as one of the causes.[5] While some bacteria have managed to develop resistant enzymes like beta lactamase, some others have mechanisms that pump out the antibiotic. Since bacteria had developed a beta lactamase enzyme that degrades the beta lactam ring of antibiotics, beta lactamase resistant antibiotics were

developed. These antibiotics like Amoxicillin+Clavulanic acid have proved to be useful in the treatment of tonsillitis to a great extent. But, recent studies are showing an increasing resistance to these antibiotics too.

Methods

This was a prospective observational study.

Inclusion criteria

Inclusion criteria were patients coming with a history of throat pain, pain on swallowing, fever, body ache and other constitutional symptoms. Patients with a clinical evidence of acute tonsillitis which includes congestion over the anterior pillar, redness of the tonsils, enlarged and tender jugulo-digastric lymph nodes.

Exclusion criteria

Patients with HIV/Immune compromised patients, diabetes, patients on steroid medications, patients with a history of chronic granular pharyngitis and patient belonging to an age group of more than 50 years were excluded from the study.

RESULTS

Table 1: Resistance and sensitivity observed against various antibiotics.

Antibiotic	Resistance	Sensitive
Methicillin	60.00%	40.00%
Gentamicin	14.00%	86.00%
Vancomycin	0.00%	100.00%
Erythromycin	24.00%	76.00%
Ciprofloxacin	60.00%	40.00%
Cotrimoxazole	16.00%	84.00%
Ofloxacin	64.00%	36.00%
Clindamycin	18.00%	82.00%
Linezolid	8.00%	92.00%
Ampicillin	58.00%	42.00%
Amoxycillin	56.00%	44.00%
Amoxycillin+clavulanate	74.00%	26.00%
Amikacin	28.00%	72.00%
Norfloxacin	0.00%	100.00%
Cephalexin	78.00%	22.00%
Cefotaxime	78.00%	22.00%

Antibiotic resistance was seen in case of the commonly used antibiotics like ampicillin, amoxicillin, Amoxicillin+Clavulanic acid. Cephalosporins were less commonly used antibiotics and showed resistance in 78.00% cases. Cotrimoxazole showed about 16.00% resistant cases. The less commonly used antibiotic was vancomycin however, showed high sensitivity (100%) followed by Linezolid (92.00%) and Clindamycin (82.00%). Erythromycin showed 76% sensitivity while ciprofloxacin showed a low sensitivity of 40.00% followed by Cephalosporins (22.0%).

Discussion

In our study antibiotic resistance was seen in case of the commonly used antibiotics like ampicillin, amoxicillin, Amoxicillin+Clavulanic acid. Cephalosporins were less commonly used antibiotics and showed resistance in 78.00% cases. Cotrimoxazole showed about 16.00% resistant cases. The less commonly used antibiotic was vancomycin however, showed high sensitivity (100%) followed by Linezolid

(92.00%) and Clindamycin (82.00%). Erythromycin showed 76% sensitivity while ciprofloxacin showed a low sensitivity of 40.00% followed by Cephalosporins (22.0%). This was found to be in accordance with the findings of Tsering in 2011.[6] The high sensitivity of vancomycin may be due to its mechanism of inhibiting cell wall synthesis by binding to the building blocks of peptidoglycan wall of the bacteria. Also, vancomycin is the final resort used in case the other antibiotics fail. This may also be a cause of its high sensitivity pattern.

Conclusion

The antibiotic sensitivity pattern could revolutionize the management of chronic tonsillitis.

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