

Summary

Otitis media (OM) and tonsillitis are a common childhood diseases. These diseases has current property and causes significant morbidity of infected children and reduce their activities.

The study was designed to improve the immunogenetic and bacteriological cross reaction of *Strep. pyogenes* isolates which isolated from acute otitis media (AOM) and tonsillitis as a causative agent. Two hundred patients (105 males and 95 females) with age less than 5.5 years. These children were suffer from tonsillitis and ear infections were presenting to five hospitals in Baghdad city (Imam Ali hospital, AL-Sadr general Hospital, Ibn Al-Baladi Hospital, Children welfare, Baghdad Teaching Hospital and Ghazi Al-Hariri Hospital) during the period of 6 February /2014 -18 May /2014.

The *Strep. pyogenes* isolates were diagnosed phenotypically after identification of isolated bacteria by cultural morphology, biochemical tests, API 20 Strep system and confirm identification by VITEK-2 system. The sensitivity of *Strep. pyogenes* isolates against antibiotics was tested by Kirby-Bauer disc diffusion methods and also VITEK-2 system for antimicrobial susceptibility testing.

Polymerase Chain Reaction was used to detect Streptokinase, Plasminogen (PAM) genes and (SF-1), of *Strep. pyogenes* as immunogenetic aspects .

The results revealed that the most frequent Gram positive isolated bacterium was *Strep. pyogenes* which tonsillitis forms 20(20%) *Strep. pyogenes*, 9(9%) *Staphylococcus aureus*, 11(11%) *Pseudomonas*

aeruginosa, 5(5%) *Candida* and only 1(1%) *H. influenza*. While no growth were detected in 54(54%) samples. While in otitis media showed 7(7%) *Strep. pyogens*, 24(24%) *Staphylococcus aureus*, (4%) *Pseudomonas aeruginosa*, 9(9%) *Candida* and only 3(3%) *H. influenza* isolates.

The results of culturing bacteria showed that twenty seven 27 from 200 samples were *Strep. pyogenes* isolates, which able to grow on blood agar, and with beta hemolysis. All these results were confirmed by analytical assays API 20 Strep and VITEK 2 system.

Distribution of disease severity among study's cases showed that no significant differences ($P>0.05$) between the severity of tonsillitis and otitis media with increasing in the incidence of acute tonsillitis and otitis media 81(81.0%) and 86(86.0%) respectively while the incidence of chronic case of tonsillitis were 19(19.0%) and 14(14.0%) of otitis media.

The antibiotics susceptibility test of *Strep. pyogenes* isolates showed that it is sensitive to Benzylpenicillin, 25(92.6%), Ampicillin 24(88.88%) , Penicillin 16 (59.26%), Amoxicillin 24(88.88%), Trimethoprim /Sulfamethoxazole 22(81.48%), Cefotaxim 26(96.3%) and Erythromycin 26(96.3%). While there were a decrease in the sensitivity of Levofloxacin 12(44.44%), Tetracycline 9(33.33%). Also some isolates of *Strep. pyogenes* showed 1(3.7%) resistance to Clindamycin. These results were documented by VITEK-2 system, which detected the antimicrobial susceptibility, that explain the compatible that nearly to results obtained by using Kirby-Bauer disc diffusion methods.

The result of Streptokinase gene were amplified by PCR using Ska gene specific forward and reverse primers. These results presented in showed

that 20(74.1%) *Strep. pyogenes* isolates of tonsillitis infection and otitis media were positive except 7(25.9%) isolates. The size was 1322bp of the DNA ladder (100-1500bp).