

## Nasopharyngeal carriage, antibiotic resistance and serotype distribution of *Streptococcus Pneumoniae* among healthy adolescents in Zahedan

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### Abstract

**Background and objectives:** Colonization of nasopharynx by *Streptococcus Pneumoniae* can lead to pneumococcal disease. This study was performed to determine the carriage rate of nasopharyngeal *S.pneumoniae* in adolescents, antibiotic susceptibility and serotype prevalence in Zahedan, Iran

**Material and Methods:** Nasopharyngeal specimens were obtained from 865 adolescents aged 10-19 years old of eight schools in Zahedan and then assessed by standard procedures to isolate *S. Pneumoniae*. The serotyping was carried out by latex agglutination test and the minimum inhibitory concentration (MIC) of penicillin, as well as other commonly used antibiotics, was determined by a broth-dilution method.

**Results:** Pneumococci were Isolated from 15.7% [136/865, 95% confidence interval (CI) 12.3-18.9] of total samples. Of 136 samples, 119 isolates are typified by the available antisera which the most frequent ones are 1, 19A, 15C, 9V, 11A and 19F. Ninety-three pneumococcal isolates are sensitive to penicillin. The MIC values of antibiotics tested are ( $\mu\text{g/ml}$ ): penicillin 0.01-4, cefotaxime 0.01-4, ceftriaxone 0.02-128, chloramphenicol 0.08-32, ciprofloxacin 0.06-16, erythromycin 0.01-128, tetracycline 0.08-128 and vancomycin 0.02-1.

**Conclusion:** A clear diversity is seen in the serotype distribution of the *S. Pneumoniae* isolates and most of the antibiotic resistant strains belong to a few serotypes. Healthy adolescents in Zahedan commonly show pneumococcal carriage and antibiotic resistance.

**Keywords:** *Streptococcus Pneumoniae*, nasopharyngeal carriage, penicillin resistance, serotype