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Serotype and genetic variations in COPD infected with Streptococcus pneumoniae in Tehran- Mohammad Reza Pourshafie- Institute Pasteur of Iran

Mohammad Reza Pourshafie
Institute Pasteur of Iran, Tehran

Abstract

A total of 100 Streptococcus pneumoniae were collected in Tehran, Iran. The strains were tested for antimicrobial susceptibility and Minimum Inhibitory Concentrations (MIC), serotyped, and genotyped by Multilocus Sequence Typing (MLST). The most frequent serotypes amongst the isolates of S. pneumoniae (PNSP) were 14 (24%), 23F (18%) and 19F (17%). MLST indicated a high degree of genetic diversity amongst the 93 PNSP with 36 different sequence types. Six internationally known penicillin resistant clones were identified in our isolates amongst which Spain23F-1 (ST81), Spain6B-2 (ST90), Spain9V-3 (ST156) were the predominant clones. The results indicated international identifiable clones of S. pneumoniae, especially Spain23F-1 with high penicillin resistance, could play a major role in spread of antimicrobial resistant in Iran. The extensive sequence variation in PBP2x, PBP2b, and PBP1a in resistant strains was suggestive of a widespread homologous recombination within S. pneumoniae populations.

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