ABSTRACT


Methods: Phenotypic and genotypic characterization of the isolates and their resistance mechanisms.

Results: Of 555 isolates studied, 216 (38.9%) were susceptible, 10 (1.8%) were intermediate and 329 (59.3%) were resistant to erythromycin. Vietnam had the highest prevalence of erythromycin resistance (88.3%), followed by Taiwan (87.2%), Korea (85.1%), Hong Kong (76.5%) and China (75.6%). Ribosomal methylation encoded by erm(B) was the most common mechanism of erythromycin resistance in China, Taiwan, Sri Lanka and Korea. In Hong Kong, Singapore, Thailand and Malaysia, efflux encoded by mef(A) was the more common in erythromycin-resistant isolates. In most Asian countries except Hong Kong, Malaysia and Singapore, erm(B) was found in >50% of pneumococcal isolates either alone or in combination with mef(A). The level of erythromycin resistance among pneumococcal isolates in most Asian countries except Thailand and India was very high with MIC90s of >128 mg/L. Molecular epidemiological studies suggest the horizontal transfer of the erm(B) gene and clonal dissemination of resistant strains in the Asian region.

Conclusion: Data confirm that macrolide resistance in pneumococci is a serious problem in many Asian countries.

Keyword: Erythromycin; erm(B); mef(A); Pneumococci