Abstract

Group B Streptococci (GBS) is the leading cause of neonatal infections, e.g. pneumonia, sepsis and meningitis. In addition, it has emerged as an important pathogen among non-pregnant adults, especially the elderly with underlying diseases. According to previous studies, serotype III and V are the most prevalent strains of GBS in Taiwan, with serotype III alone accounting for the majority of neonatal meningitis. However, the pathogenesis remains unclear. In the present study, one hundred and sixty six GBS isolates from bloodstream infection were tested to examine the distribution of Alp surface protein. Most of Alp surface proteins were bca, alp2/3, and rib accounting for 84.8 % of the isolates, and rib was the most prevalent. Interestingly, 70.5 % of neonatal isolates expresses rib, indicating the important role contributed to the bacteremia in neonates. Comparatively, *bca* and *alp2/3* were the major forms of adult. From the analysis of connectedness among serotypes, pulse field gel electrophoresis (PFGE) type and Alp, three strains, type III/PFGE type 1/ rib, type V/ PFGE type 4/ alp2/3, and type Ib/PFGE type 12/ bca were dominate in south Taiwan. Further, 76.5 % of isolates causing meningitis of neonates was *rib*-positive; in other words, the *rib* gene may play an important role in the neonatal meningitis. The sequence analysis of rib revealed that 80% of the protein has various 79-residue tandem repeats. In this study, the number of tandem repeats of Rib protein has a wide variety in our clinical isolates. Furthermore, the variability of tandem repeats is irrelevant to the spectrum of diseases; instead, it is strongly related with the virulence to patients with different age group. Further characterization of the Rib protein in the pathogenesis of GBS meningitis or delineation of the major role of Rib tandem repeats in GBS infection are important for vaccine development and drug design.

Key words: Group B streptococcus, neonatal infection, Alp surface protein, Rib protein, tandem repeat, meningitis