

## Serotypes distribution and virulence factors of *Streptococcus agalactiae* isolates from pregnant women attending antenatal clinics in Western Province of Sri Lanka

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**Introduction and objective(s):** *Streptococcus agalactiae* (Group B Streptococcus; GBS) causes severe and life-threatening infections in neonates. The organism is classified based on capsular polysaccharides into ten serotypes. Understanding distribution of GBS serotype and virulence factors with geographical variation is important for formulation of an effective vaccine. This study investigated the presence of serotypes and virulence genes of GBS isolated from pregnant women.

**Methods:** Forty-five GBS isolates collected from January to August 2019 from pregnant women attending antenatal clinics of 4 teaching hospitals in the Western Province of Sri Lanka were included. Forty isolates were from vaginal specimen and 5 isolates were from rectal specimens. Isolated GBS were tested to identify 9 serotypes by multiplex PCR. Different virulence determinants, including *bac*, *rib* and *scp(B)* were tested for by PCR.

**Results:** Among the 45 GBS-positive isolates, the most abundant serotype detected was type III (n=12, 26.7%) followed by serotypes II (n=9, 20%); V (n=8, 17.8%); Ia (n=7, 15.6%); VI (n=7, 15.6%); Ib (n=1, 2.2%) and IV (n=1, 2.2%) while serotypes VII, VIII and IX were not detected. Forty (88.8%) isolates expressed the *scpB* gene. The presence of the *rib* gene was confirmed in 8 (17.8%) and *bac* in 6 (13.3%) isolates. *ScpB*, *rib* and *bac* were identified in 2 (4.4%) isolates. A further 4 (8.9%) isolates were found to express *scpB*, *rib* but not *bac*, while 4 (8.9%) isolates were *scpB*, *bac* positive and *rib* negative. None of these three virulence genes were expressed in 4 (8.9%) isolates.

All isolates of serotype VI expressed *scpB* gene. The *rib* gene was more common among serotype II and was not found in serotype Ib, IV and VI. The *bac* gene was more common in serotype V and was not found in serotype Ia, Ib and IV. There was no significant association between serotypes and virulence genes ( $p > 0.05$ ).

**Conclusion:** Serotype III was the most abundant serotype and the C5a peptidase (*ScpB*) is the commonest virulence gene detected in the tested population. The proportion of  $\beta$  antigens of the C protein (*bac*) and surface protein Rib (*rib*) was low in this study.

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