

Nasal Colonization of Staphylococcus Aureus and Streptococcus Pneumoniae in Preschool Children Attending Selected Immunization Clinics, Kandy, Sri Lanka

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Staphylococcus aureus colonization is quite common in children in Sri Lanka. Pneumococcal carriage is a prerequisite for pneumococcal disease. The objective of this study was to examine the prevalence and risk factors of nasal carriage of *S. aureus* and *Streptococcus pneumoniae* in preschool children. Both anterior nasal swabs and nasopharyngeal swabs (NPS) were collected from 375 children between 2 to 5 years, attending immunization clinics at Teaching Hospital Peradeniya and Yatinuwara MOH area during June 2023-January 2024. Nasal swabs were enriched in 6.5% NaCl and NPS were stored at -80 °C. *S. aureus* and *S. pneumoniae* were isolated using conventional microbiological testing. The study group had a median age of 54 months (IQR: 36-60), with 188 (50.1%) males and 187 (49.9%) females. Among 375 participants, 101 (26.9%) were colonized with *S. aureus*, 73 (19.5%) with *S.pneumoniae* and 21 (5.6%) with both. Of these, 52 (13.9%) carried only *S.pneumoniae* and 80 (21.3%) carried only *S.aureus*. Kindergarten attendance (OR=1.92, 95% CI=1.13-3.27), smokers at home (OR=1.85, 95% CI=1.04-3.30), having recent upper respiratory tract infections – (URTI) (OR=16.39, 95% CI=2.23-120.47), family members with URTI (OR=1.83, 95% CI=1.09-3.08) were significantly associated with pneumococcal colonization. No significant associations were found with *S.aureus* colonization. The median age was significantly different between co-colonized (60 months, IQR: 52.5-60) and non-co-colonized children (48 months, IQR: 36-60) (p=0.017). The median weight differed significantly between co-colonized (15.000kg, IQR: 12.450-16.475) and non-co-colonized children (13.200kg, IQR: 11.690-15.100) (p=0.021). Kindergarten attendance (OR=4.016, 95% CI=1.33-12.18) was significantly associated with co-colonization. No significant association found between *S.aureus* and pneumococci colonization (p=0.694). As a conclusion, *S.aureus* and *S.pneumoniae* colonization rates are considerably higher among children aged between 2 to 5 years. Kindergarten attendance is a significantly associated factor for *S.aureus* and *S.pneumoniae* co-colonization.

Keywords: *S.Aureus*, *S.Pneumoniae*, Co-Colonization, Kindergarten Aged Children

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