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| **Risk factors for RSV ICU admission in children aged<2 years** |
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| **Introduction/Aim:**  Bronchiolitis is the most common type of acute lower respiratory infection in children aged<2 years, primarily caused by respiratory syncytial virus (RSV). Currently, there is not enough research on the risk factors for very severe RSV associated bronchiolitis in children aged<2 years necessitating intensive care unit (ICU) admissions in Australia which is needed for health service planning, practice, and resource allocation.  **Methods:**  We conducted a case-control study of children aged<2 years admitted with RSV bronchiolitis admitted to the Sydney Children’s Hospital Network (SCHN), comprising two large tertiary paediatric hospitals. Our case population consisted of children with laboratory-confirmed RSV bronchiolitis who were transferred to ICU (n=100), and our control population was age-matched (1:2) children hospitalised with RSV bronchiolitis but not requiring transfer to ICU (n=187). Data on relevant risk factors were retrieved from the Electronic Medical Record system of SCHN. Adjusted and unadjusted odds ratios (ORs) with corresponding 95% Confidence Intervals (95%CI) associated with risk factors for ICU admission and in-hospital complications were determined from logistic regression models.  **Results:**  A total of 44 (44%) of 100 case and 90 (48.1%) of 187 control children were male. Age<5 months and prematurity were associated with a 2.10-fold (95%CI: 1.14-3.79) and 2.35-fold (95%CI: 1.26-4.41) increase risk in ICU admissions respectively. The presence of respiratory, cardiac and other chronic health conditions were significant risk factors for ICU admission. The clinical presentations more commonly seen in children requiring ICU admission were apnoea (aOR 5.01, 95%CI: 1.50-17.13) and respiratory distress (aOR 15.91, 95%CI: 4.52-55.97). ICU patients were more at risk of developing in-hospital complications including longer length of stay and requiring respiratory support, non-oral rehydration, antibiotics, corticosteroids, antivirals and bronchodilators.  **Conclusion:**  Our results may help in developing a clinical risk algorithm to better identify children at risk of ICU admissions for RSV bronchiolitis.  **Grant Support:** There was no specific funding for this research. |