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Linking pharmacy dispensing data to other administrative health datasets to measure the compliance and effectiveness of RSV immunoprophylaxis

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Introduction

Respiratory Syncytial Virus (RSV) causes considerable morbidity in children. RSV vaccines are in development, but the only current preventive measure is immunoprophylaxis with monoclonal antibody, palivizumab. Australia has no uniform palivizumab guidelines. In Western Australia palivizumab is licensed for use in high risk children but compliance and effectiveness is unknown.

Objectives and Approach

We conducted a retrospective cohort study using palivizumab data from multiple pharmacy dispensing datasets which had been linked with routine laboratory, hospital morbidity, emergency department presentations, deaths and perinatal data for a cohort of infants admitted to Level 3 Neonatal Intensive Care Units (NICU) between 2002 and 2013. We identified palivizumab eligible infants as those who were extremely premature (<28 weeks gestation) with bronchopulmonary dysplasia and/or who identified as Indigenous and were NICU inpatients during the annual winter RSV season (May-October). We describe the use of palivizumab in infants that did and did not fit the eligibility criteria.

Results

The NICU cohort included 24,367 infants, of which 1754 had at least 1 RSV-confirmed infection before age 5 years. A total of 686 (2.8%) cohort infants were eligible for palivizumab. Palivizumab dispensing data were amalgamated from 5 pharmacy datasets. Overall, 173 of the palivizumab eligible infants (25.2%) had at least 1 palivizumab dose (27% 1 dose, 34% 2 doses, 28% 3 doses and 11% 4 or more doses). From 2011 when palivizumab guidelines were formalised, 143 (75%) had at least 1 dose. Compliance with at least 1 palivizumab dose was highest in 2011 (84.9%). From 2002-2013, 98 infants were given palivizumab outside eligibility criteria (33% 1 dose, 33% 2 doses, 34% 3 or more doses) with annual use increasing since 2008.

Conclusion/Implications

This is the first time pharmacy dispensing data have been linked to other datasets to measure use and effectiveness. Compliance with palivizumab guidelines was high from 2011. These data will be used to measure the effectiveness of palivizumab against RSV-confirmed infections and respiratory infection-related hospitalisations up to age 5 years.

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