Title

Respiratory Tract Infection Related Healthcare Utilisation in UK Children with Down's Syndrome.

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ABSTRACT (400-word limit)

RATIONALE

Children with respiratory tract infections (RTIs) present often to general practitioners (GPs) in the UK with a mild and relatively short viral illness. In certain 'at-risk' children, such as those with Down's Syndrome (DS), RTIs can quickly become more serious and result in hospital admissions. This study aims to quantify RTI-related primary and secondary healthcare utilisation and treatments in children with DS and controls; alongside the risk of RTI-related hospitalisation, time to RTI-related hospitalisation and re-consultation with GPs.

METHODS

A total of 992 children with DS aged 0-18 years and 4,874 matched controls were included in this retrospective cohort study using the CALIBER data source. Individuals were followed up for occurrences of RTIs and antibiotic prescriptions recorded in either the primary or secondary care dataset. Rates of consultation, hospitalisation and prescription of antibiotics were calculated using Poisson regression. The Wilcoxon test allowed for comparison of hospitalisation length of stay. Analyses were stratified according to year, age, gender, RTI type, season and co-morbidities.

RESULTS

RTI-related healthcare utilisation was significantly higher in children with DS compared to controls for both GP consultations (RR 1.73; 95% CI 1.62-1.84) and hospitalisations (RR 5.70; 95% CI 4.82-6.71). Antibiotic prescribing was also consistently higher in children with DS compared to controls (Adjusted RR 2.34; 95% CI 2.19-2.5).

Overall, the length of stay in hospital due to RTIs was longer for children with DS (Mean 5.2; 95% CI 5.0-5.4 days per admission) compared to controls (Mean 2.4; 95% CI 2.2-2.6). The risk of an RTI-related

hospitalisation following an RTI-related GP consultation was higher in children with DS compared to controls (RR 3.15; 95% CI 2.35 – 4.24). In those hospitalised, the time to hospitalisation was similar in children with DS (median of 8.0 days; 95% CI 3.0-19.0) and in controls (median of 8.0 days; 95% CI 2.0-18.0).

The odds of re-consultation with a GP for an RTI following an initial RTI-related GP consultation was higher in children with DS (OR 1.69; 95% CI 1.57-1.82).

CONCLUSIONS

This is the first study of RTI-related healthcare utilisation in children with DS compared to controls utilising linked primary and secondary care data. Children with DS have higher rates of primary care consultations, antibiotic prescribing, hospitalisations, and longer hospital stays compared to controls. Children with DS are also more likely to be hospitalised following an RTI-related GP consultation and to re-consult with their GP for an RTI compared to controls.

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