

POSTER ABSTRACTS

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Increasing Second-Generation Macrolide Prescribing for Children Contradicts Recent Trends in Antibiotic Use

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Background: Rates of bacterial resistance in children continue to increase despite recent reductions in antibiotic prescribing. The use of broad-spectrum agents may contribute to this pattern. Second-generation macrolides (mac2) have become popular for use in children because of their favorable dosing and side-effect profiles; however, they are not generally recommended for use as "first line" agents.

Objective: To assess trends in mac2 use from 1995-1999 among children treated as outpatients in nine US health plans.

Methods: We collected automated claims data on dispensed medications and physician visits from nine organizations in the HMO Research Network Center for Education and Research in Therapeutics (CERT). Each HMO provided data on a sample of 25,000 enrolled children aged 3 months to 18 years from 1995-96 to 1999-2000. Antibiotic dispensings were linked, when possible, with a visit claim to assign diagnosis.

We analyzed mac2 dispensings as a proportion of all antibiotic dispensings, as well as by age, diagnosis and health plan. Dispensings without another antibiotic dispensing in the previous 42 days were considered to represent initial treatment of a new illness episode (first-line use). Chi-squared tests were used for each comparison.

Results: From 1995-96 to 1999-00, while overall antibiotic use decreased by 22%, mac2 use as a proportion of all dispensings increased 263%, from 1.9 % to 6.9%. Use as first line treatment increased from 1.4% to 6.0%. By 1999, first-line use in children less than three years old increased from 1.0% to 6.0 % overall; for pneumonia, from 5.8% to 21.2%; for bronchitis, from 6.4% to 15.4%; and for otitis media, from 0.76% to 5.1% ($p < .0001$ for all comparisons). These patterns varied widely between health plans, with 1999 first-line use for pneumonia in children under 3 ranging from 0 to 32.8% ($p < .001$).

Conclusions: Despite recent trends toward decreased antibiotic use in children, the use of second-generation macrolides in children has increased dramatically, even for younger children in whom their use for initial treatment of illness may be inappropriate. Further investigation exploring the wide variation in use among health plans should address whether formulary restrictions or other regional variation impact their use.