

## POSTER ABSTRACTS

11<sup>th</sup> Annual HMO Research Network Conference

April 4-6, 2005 Santa Fe, NM

TRIP  
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### Development of a Clinical Prediction Rule for Group A Streptococcal Pharyngitis in Children Ages 2-12 Years: The Bonner Criteria

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**Background:** Prediction rules to identify group A streptococcal (GAS) pharyngitis have been validated in adults, but do not exist in a useful form for pediatric patients. The purpose of our study is to develop a clinical prediction rule to identify children ages 2-12 years with GAS pharyngitis.

**Methods:** Children ages 2-12 years were chosen for evaluation because they have a high incidence of GAS pharyngitis. Children presenting to an academic pediatric practice, from November 2003 to October 2004, were enrolled whenever an attending physician ordered a rapid GAS test as part of the patient's care. Presenting symptoms and clinical findings were collected prospectively at the visit. Our pediatric clinical prediction rule was developed using univariate analysis and multivariate logistic regression.

**Results:** 906 children ages 2 through 12 years of age were enrolled, of whom 356 (40%) were positive for GAS. Scarletina rash alone had a sensitivity of 12% (44/356), specificity of 98% (539/550), and a positive predictive value (PPV) of 80% (44/55). In patients without scarletina rash, the following coefficients apply: 0.44 sore throat/difficulty swallowing, 0.34 lymphadenopathy, 0.41 pharyngeal erythema, and 0.58 palatal petichiae. Using these coefficients, we developed a clinical prediction rule to identify GAS pharyngitis in children without scarletina rash. This rule resulted in the following probabilities: 0 features 8%, 1 feature 15-22%, 2 features 29-41%, 3 features 50-62% and all 4 features 76%.

**Conclusion:** We have developed a two-part pediatric specific clinical prediction rule that is more sensitive than those currently used for GAS detection in adults. 1) Scarletina rash is a stand-alone predictor for group A streptococcal infection. 2) For patients without scarletina rash, use of our criteria will allow clinicians to more appropriately choose testing and treatment options for children 2 through 12 years of age. Using these criteria in an HMO setting is expected to reduce the cost of testing and inappropriate antibiotic use in children ages 2-12 years with pharyngitis.