Pharyngitis is the most common indication for antibiotics in children age 6-12 years. Non-Group A Streptococci (NGAS) are isolated in up to 12% of adults with pharyngitis. Of NGAS organisms, Group C and G Streptococcus are the most commonly identified. The incidence and epidemiology of NGAS in children is unknown. Controversy exists over whether NGAS infection results in sore throat or infection. Current IDSA guidelines recommend treatment of NGAS, however, the in-practice prescribing patterns for NGAS has not been explored.

This retrospective, descriptive study was completed at Marshfield Clinic Health System, a large community-based integrated health care system, from 2007-2017. 

Inclusion criteria: Age <18, Rapid Streptococcal antigen test (RST) or throat culture completed.

Epidemiologic analysis was completed for the entire cohort. To evaluate clinical symptoms and antibiotic prescribing a random sample of 600 patients was selected for abstraction.

Sample size was based on a 90% power to detect a 5% or greater difference with a two-tailed alpha of 0.05 or less. Comparative analysis (GAS vs. NGAS vs. negative culture) utilized Fisher's exact tests and Wilcoxon rank sum tests. Significance was noted with a p<0.05.

Multivariate logistic regression models were generated and receiver operator curve analysis was used to evaluate the results. Both area under the curve (AUC) >0.715 and receiver operating curve area AUC = 0.682, 0.649 - 0.715 were selected for abstract.

Conclusion:

The incidence of NGAS increased with age, but did not show yearly or seasonal variations.

Children with negative cultures were less likely those with NGAS to be:

- older (aOR 0.90 (0.88-0.92), p=0.001)
- lymphopenopa (aOR 0.64 (0.49-0.85), p=0.002)
- enlarged tonsils (aOR 0.67 (0.49-0.85), p=0.01)

Children with GAS were more likely than those with NGAS to have:

- petechiae (aOR 3.34 (1.85-6.04), p<0.001)
- sore throat (aOR 2.58 (1.83-3.94), p<0.001)
- throat erythema (aOR 1.67 (1.20-2.33), p<0.001)
- lymphopenopa (aOR 1.46 (1.10-1.92), p<0.001).

Complications were rare and rates did not differ between patients with NGAS, GAS, and negative cultures.