Susceptibility Trends of *H. influenzae* and *M. catarrhalis* Against Orally Administered Antimicrobial Agents: Five Year Report from the SENTRY Antimicrobial Surveillance Program

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**ABSTRACT**

The SENTRY Antibiotic Surveillance Program was established in 1997 as a global longitudinal investigation to monitor antimicrobial susceptibility trends of confirmed pathogens from clinical isolates. The objectives of this study were to: 1) identify new agents against common and emerging pathogens; 2) monitor antimicrobial susceptibility of confirmed strains in the SENTRY Antimicrobial Surveillance Program (North and Latin America). The comprehensive results of this five year SENTRY Program study on the activity of commonly prescribed oral antimicrobial compounds against *H. influenzae* and *M. catarrhalis* are reported, with the notable exceptions of amoxicillin-penicillins (β-lactamase-mediated), chloramphenicol, cephalosporins, and trimethoprim/sulfamethoxazole in NA.

**RESULTS**

- The ampicillin resistance rates (Table 1) for *H. influenzae* were higher in EU (78.7%) compared to NA (65.6%). Resistance producing *M. catarrhalis* isolates harbored low (≤ 5%) resistance rates across all regions, which was higher in LA.
- NA isolates of *H. influenzae* were less susceptible to chloramphenicol (81.1%) and cephalosporins (84.3%) compared to isolates from the other regions, which is biologically expected.
- Rifaximin resistant *H. influenzae* strains were rarely observed in any of the study regions (1%-2%), thus rendering an off-target agent for prophylaxis.
- Trimethoprim/sulfamethoxazole activity was particularly compromised in EU (69.3%) susceptible for *H. influenzae* isolates (10.5%) than in the other regions (89.9% and 94.0%, respectively).
- Isolates of *H. influenzae* and *M. catarrhalis* with elevated fluoroquinolone MICs were observed in all regions with the greatest occurrence in NA. This emerging resistance problem should be actively monitored by surveillance systems to confirm possible trends.

**MATERIALS AND METHODS**

Antimicrobial activity of 17 orally administered compounds tested against 4,050 recent clinical isolates of *H. influenzae* and *M. catarrhalis* from the SENTRY Antimicrobial Surveillance Program (North and Latin America) in 1997-2001. Table 1: Antimicrobial activity of 17 orally administered compounds tested against 4,050 recent clinical isolates of *H. influenzae* and *M. catarrhalis* from the SENTRY Antimicrobial Surveillance Program (North and Latin America) in 1997-2001. Table 2: Antimicrobial activity of 17 orally administered compounds tested against 4,050 recent clinical isolates of *H. influenzae* and *M. catarrhalis* from the SENTRY Antimicrobial Surveillance Program (North and Latin America) in 1997-2001.

**SELECTED REFERENCES**

- Blaschke JJ, Jones R, Paller MD. *The SENTRY Antimicrobial Surveillance Program (North America and Europe)*. Activity of *Macrolides* against recent clinical isolates of *Streptococcus pneumoniae* and *Hemophilus influenzae*. *Diagnosis Microbiology and Infectious Disease* 2000; 36:255-259.