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Abstract (poster session)

**Prevalence of *Streptococcus pneumoniae* in respiratory samples from patients with tracheostomy in a long-term care facility**

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**Objectives:** The study objectives were to: 1) study the prevalence of *Streptococcus pneumoniae* in institutionalized patients with chronic tracheostomy; 2) compare pneumococcal carriage in nasopharyngeal (NP) vs. endotracheal (ET) cultures; and 3) assess of demographic and microbiologic effects on isolation site. .

**Methods:** The study was conducted as part of an infection control intervention in a long-term care institution. Three point-prevalence surveys of *S. pneumoniae* carriage were conducted in Jan/2009, Jan/2010 and Jun/2011. Both NP swabs and ET aspirates were obtained from patients with chronic tracheostomy. Bacterial identification and antimicrobial susceptibility testing were done using Vitek-2 system. *S. pneumoniae* isolates were characterized by serotyping. The rates of NP vs. ET-derived positive cultures were compared using McNemar's test and correlations between categorical variables were analyzed using Chi-square test. **Results:** 264 pairs of NP and ET cultures were taken from 188 patients. 30 patients were <18 years old. 14 (5%) and 45 (17%) of NP and ET cultures, respectively were positive ( $p<0.001$ ). ET positivity rate was higher than NP in all 3 surveys. Overall proportion of positive cultures in children ( $\leq$  years old) vs. adults did not differ significantly (21% vs. 18%, respectively,  $p>0.05$ ). However, ET positivity rate was higher than that of NP cultures in adults (18% vs. 3%, respectively,  $p<0.001$ ), but not in children (17% vs. 17%, respectively). Serotype 23F was present in a higher proportion in ET-derived isolates (42%) than in NP-derived isolates (21%), whereas serotype 15A was more common in NP-derived isolates (21%) than in ET-derived isolates (9%,  $p<0.05$ ). Serotypes 17F and 19F were similarly prevalent in both groups of isolates. Serotypes 19F and 23F were more common in adults vs. children (72% vs. 30%, respectively), whereas serotypes 15A and 17F were more common among children (70% vs.12%, respectively,  $p<0.01$ ). The majority of isolates were non-susceptible to penicillin (72%). Ofloxacin non-susceptibility was high and more common in serotypes 19F (92%) and 23F (100%), compared with other serotypes (14%,  $p<0.001$ ). **Conclusion:** In the studied institution, among patients with a chronic tracheostomy, *S. pneumoniae* was present in a higher proportion in ET than NP in adults, whereas the yield from both sites was similar in children.