**Streptococcus pneumoniae** nasopharyngeal carriage rates, serotype distribution and vaccine effectiveness in vaccinated and non-vaccinated healthy children in Guatemala City.

**BACKGROUND**
- **Streptococcus pneumoniae (Spn)** vaccines have different efficacy rate according to setting.
- Assuming colonization as a surrogate for vaccine efficacy.
- Study looked for colonization rate in healthy children under 5 years of age.
- Study approved by ethics committee, informed consent was obtained.
- Colonization rate was 32%, 40.3% in the public and 18.5% in the private clinic.
- Healthy children under 5 years of age.
- From public and private clinics.
- Conjugated pneumococcal conjugated vaccine (PCV) was available only in private practice.

**OBJECTIVES**
- To evaluate Spn nasopharyngeal carriage, serotype distribution and vaccine effectiveness for preventing colonization in healthy children under 5 years of age from Guatemala City.

**METHODS**
- Study approved by ethics committee, informed consent was obtained.
- Included:
  - Healthy 2-59 months children.
  - No recent history of antibiotic use.
  - One public and two private child clinics in Guatemala City.
  - A single nasopharyngeal swab was performed to all subjects.

**RESULTS**
- 500 nasopharyngeal swabs where performed from November 2012 to January 2013.
- Colonization rate was 32%, 40.3% in the public and 18.5% in the private clinic.
- Serotyping was performed in 134 of 158 positive samples.
- Serotype specific colonization prevention was 100% for most vaccine related serotypes, with exception of serotype 6B, prevented in 95% (22/23) and 98% (83/84) for PCV7 and PCV13 respectively, and 19F that was prevented 96% (81/84) for PCV13. Serotype 15B was prevented 75% with PPSV23.
- Overall isolation of vaccine related serotypes was:
  - 43% (57/134) of serotypes are included in PCV7.
  - 44% (59/134) of serotypes are included in PCV10.
  - 52% (68/134) of serotypes are included in PCV13.
  - 71% (96/134) of serotypes are included in PPS23.

**CONCLUSIONS**
In our study, high vaccine effectiveness for preventing colonization was found, which could predict a good vaccine performance in our setting.

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