**Title: SEROTYPE 19A: PREVALENCE AND ANTIMICROBIAL RESISTANCE IN THE PRE AND POST-PCV10 PERIOD IN SOUTHERN BRAZIL**

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**Abstract:**

A decrease in the prevalence of vaccine serotypes was observed in regions of the world where use of conjugate pneumococcal vaccine was implemented, with subsequent emergence of replacement by non-vaccine serotype, especially serotype 19A. This serotype is associated with resistance to different antimicrobials. In 2010, a 10-valent pneumococcal conjugate vaccine (PCV 10) has been introduced in national program of immunization, in Brazil, for children aged < 2 years. The objective this study was to evaluate prevalence the serotype 19A in pre and post vaccination periods, as well as the susceptibility patterns among *Streptococcus pneumoniae* isolates. The isolates were serotyped using a sequential multiplex PCR; Etest was employed to determine the minimal inhibitory concentration (MIC). The presence of *ermB* and *mefA* genes was verified by duplex PCR. We studied 35 *S. pneumoniae* isolates of serotype 19A obtained from invasive and non-invasive disease of pre vaccine (2008- 2009) and post vaccine (2010 – 2014) periods, most were recovered from blood (65%). In pre-PCV10 period, 2.27% (6/264) isolates belonged to this serotype, and an increase was observed in the post-PCV10 period, with 6.22% (29/466) of the isolates. In pre-PCV10 period, all isolates were susceptible to penicillin, ceftriaxone (considering non-meningitis breakpoints), erythromycin, tetracycline, levofloxacin and vancomycin. One isolate showed intermediate resistance to trimetroprim-sulfamethoxazole and other was resistant. In post-PCV10 period, we noted an increase of non-susceptible MICs, been 21.4% (6/28) non-susceptible to penicillin and 42.8% (12/28) isolates were non-susceptible to ceftriaxone, both non-meningitis breakpoints and the MIC was not determined in one isolate. Among the three isolates recovered from cerebrospinal fluid, all were resistant to penicillin, one was resistant to ceftriaxone and the other two had intermediate MICs. All isolates were susceptible to levofloxacin and vancomycin. The non-susceptibility for tetracycline and erythromycin was 71.4% (20/28) for both, and 64.3% (18/28) for trimetroprim-sulfamethoxazole. The *ermB* gene was associated with higher MICs to erythromycin, present in 44.8% (13/29) of the post-PCV10 isolates. The *mefA* gene was present in 75.8% (22/29) of post-PCV10 isolates. Our results indicate the emergence of a resistant variant of isolates belonging to serotype 19A after PCV-10 implementation.

**Keywords:** Brazil, resistance, serotype 19A*, Streptococcus pneumoniae*, susceptibility profile.

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