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## 1) Characterization of *Streptococcus pneumoniae* serotype 19A isolated between 1993 and 2011 in Argentina from children with invasive pneumococcal disease.

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In the last few years invasive pneumococcal disease **(**IPD) caused by *S. pneumoniae* (SPN) serotype 19A has increased worldwide. This increase has occurred in countries with and without the introduction of the pneumococcal conjugate vaccine (PCV) in children. The aim of this study was to analyze the evolution of SPN serotype 19A associated with invasive disease in <6 years old children before the introduction of the PCV13 in the National Schedule in January 2012.
**Methods:** A total of 3593 SPN isolates were collected through the SIREVA surveillance from 1993 to 2011 in 114 hospitals in 20 provinces and Buenos Aires city, 148 (4.1%) were serotype 19A. Samples were recovered from normally sterile body sites from children < 6 years old. The strains were serotyped by Quellung reaction. MIC was performed by agar dilution (CLSI), genetic relatedness by *Sma*I PFGE and selected strains were studied by multilocus sequence typing (MLST).
**Results:** The 148 serotype 19A strains were isolated from blood (59.5%), cerebrospinal fluid (19%), pleural fluid (16.3%), and other sites (5.2%). Pneumonia was the most frequent diagnosis 49%, followed by meningitis 19%, sepsis 14%, and others 18%. Serotype 19A isolates increased from 3% in 1993 to 6% in 2011. Penicillin non susceptibility was 59% using the meningitis break-point (MIC≥0.12 ug/ml), and 0.7% according to the nonmeningitis break-point (MIC≥4 ug/ml). Penicillin non susceptibility increased along the time of study from 0% in 1993 to 83% in 2011 ($p<0.001$). Non-susceptibility rates were: 4.2%/2.1% for meningitis/nonmeningitis cefotaxime break-points, 2.8% meropenem, 14.2% erythromycin, 23.4% trimethoprim/sulfamethoxazole and 7% tetracycline. All strains were susceptible to rifampin, levofloxacin, chloramphenicol and vancomycin. By PFGE we detected 37 clonal types; however serotype 19A isolates showed a clonal behaviour: 74/141 (53%) belonged to a dominant clone, assigned by MLST as ST1131 (SLV172). Most of the ST1131 isolates (85%) showed penicillin MIC between 0.12 and 1 ug/ml. Multidrug resistance was detected in 7% of the strains and the most common phenotype of resistance was: penicillin + cefotaxime + erythromycin + trimethoprim/sulfamethoxazole + tetracycline (3.5%).
**Conclusion:** The increase in the prevalence of penicillin resistance in SPN serotype 19A before the introduction of PCV13 into the National Calendar of vaccination was mainly associated with the spread of ST1131 clone. The impact of PCV13 in serotype 19A needs further evaluation.