

**TITLE:** DATA OF BACTERIAL ISOLATES IN CASES OF MENINGITIS OCCURRING IN THE STATE OF PARANÁ FROM 2013 TO 2016

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**ABSTRACT:**

Bacterial meningitis caused by *Neisseria meningitidis* (Nm), *Streptococcus pneumoniae* (Spn) and *Haemophilus influenzae* (Hi) is an important public health problem, due to its high mortality rate and morbidity, as well as the possibility of causing outbreaks and epidemics, such as in the case of Nm. Thus, the Laboratory and Epidemiological Surveillance of these bacterial agents provides data for the promotion of public health policies, such as the characterization of bacterial isolates, the monitoring of antimicrobial resistance profile, blockade prevention for outbreaks and vaccination prophylaxis. The objective of this study was to evaluate the prevalence of Spn, Nm and Hi strains isolated from CSF in the state of Paraná - Brazil, from 2013 to 2016, highlighting the prevalence of serogroups and bacterial serotypes and to associate the different vaccines available. CSF samples were seeded for culture, identification and latex exam at the Central Laboratory of the State of Paraná (Lacen/PR), and later the bacterial isolates were sent to the Adolfo Lutz Institute (ALI), in São Paulo, to confirm the serogroups/serotypes and the antimicrobial resistance profile. A total of 147 bacterial isolates were analyzed, of which 98 Spn (66.7%), 41 Nm (27.9%) and 08 Hi (5.4%). Among the Spn isolates the most frequent serotypes were 3 (n = 13); 6C (n = 9); 19A (n = 8); 23A and 16F (n = 5, each); 23B, 15C, 9N, 11A and 15A (n = 4, each). The most frequent Spn serotypes are not included in the PCV10 vaccine of the National Immunization Program (NIP), while in the PCV13 vaccine, serotypes 3 and 19A are contemplated. The percentage of Spn resistance to Penicillin was 34%. The most frequent Nm serogroups were B (n = 18, 43.9%), C (n = 16, 39%), Y (n = 04, 9.8%) and W (n=03, 7.3%). The main associated phenotypes of Nm B and C were, respectively, B:4.7:P1.19,15 and C:23:P1.14-6. The isolates of Hi were 03 of type "a", 03 of type "b" and 02 of nontypeable, of which only one isolate producer of betalactamase. A change in the epidemiology of Spn was observed with the absence/decrease in the prevalence of the vaccine serotypes and concomitant increase in the isolation of other non-vaccine serotypes. However, continuous monitoring is essential to generate data that can support immunization and disease prevention policies, as well as evidence for NIP in the evaluation of the impact of vaccines.

**Keywords:** Bacterial meningitis, vaccination, epidemiological surveillance, cerebrospinal fluid.

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