Title: Long-term effects of meningococcal C vaccination on meningitis disease in the metropolitan region of Salvador, Bahia

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Meningococcal disease is associated with high morbidity and mortality rates and is considered a serious Public Health problem. Meningococcal C Conjugate Vaccine (MenC) was included into the Brazilian national immunization program (NIP) in 2010 as a strategy for immunoprevention of MD by serogroup C meningococcus. The goal of this study was to evaluate the impact of MenC on the epidemiology of MD in the Metropolitan Region of Salvador (MRS), comparing the transition period (2010) and post-vaccination period (2011-2016). It was an observational, retrospective study, based on a hospital-surveillance. We included all the patients with confirmed diagnosis for MD attended at the state hospital of reference for infectious diseases or notified by the Municipal Health Department of Salvador from January 2010 to December 2016. A total of 486 cases of MD were confirmed in the above mentioned period, the majority of the patients were male (61.1%), the median age was 21 years, the median length of hospitalization was of 11 days, the main outcome was cure (78, 6%) and lethality rate was of 18%. The mean annual incidence in MRS in the same period was 1.47 cases/100,000 hab. In all years, the incidence was higher in the age group of 0-4 years than in the general population. Comparing the transition period with the post-vaccination period, there was a marked decrease in the incidence in the vaccine age group (0-4 years) (mean of 61.7% of the reduction). There was also a marked reduction in the incidence in other age groups and in the general population (mean of 74.1% of the reduction). In the years of the study were identified the serogroups C (76%), B (9.1%), W (6.2%) and Y (1%); 7.7% were ungroupable. There was a decrease in the number of MD cases by serogroup C in all age groups after introduction of MenC, and no case was reported in the vaccinal age group since 2012. The incorporation of MenC in NIP has been positively impacting the control of MD caused by group C meningococci. The reduction of MD in other age groups besides vaccination may be a result of the herd effect promoted by this vaccine. The absence of cases among the vaccinates reiterates the efficacy of MenC. The microbiological profile of the disease is dynamic and needs to be monitored continuously.

Keywords: Epidemiology. Meningococcal Disease. Meningococcal C Conjugate Vaccine.