

(1) Submission ID#1527214

Impact of COVID-19 Pandemic on the Epidemiology of Bacterial Meningitis in the Meningitis belt of Northern Nigeria. 2018–2022

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Background

In tropical Africa, cerebrospinal meningitis (CSM) is a major public health problem affecting many countries including Nigeria. Northern Nigeria lies in the meningitis belt of sub-Saharan Africa, an area characterized by high endemic disease and frequent epidemics. After the first case of COVID-19 in the world reported in Wuhan, China in December 2019, the novel SARS-CoV-2 has overwhelmed the health system of the high, middle, and low-income countries globally. Here, we present the findings of meningitis surveillance and the impact of the COVID-19 pandemic on the epidemiology of CSM cases in Kano, northern Nigeria.

Aim/Methods

Kano is a northern Nigerian state with an estimated population of over 16 million; 40% live in urban areas and 60% in rural communities. Line listing of suspected meningitis cases and deaths were collected by the surveillance team from January 2018 to December 2022. Incidence rates and epidemiologic distribution of cases were evaluated, immunization status and case-fatality ratios were determined.

Results

A total of 228 suspected cases of bacterial meningitis were reported of which only 43 were confirmed between January 2018 to December 2022 to the IDSR with the highest cases ($n=126$) in 2018 and least in 2020 ($n=2$). Among all the reported cases, only 0.87% (2 of 228) were immunized for meningococcal disease and the highest CFR of 72.7% (28 of 33) was obtained in 2021 while the least (0%) was in 2020. Majority of the cases (64%) were males mostly from the rural communities. The cases also occurred predominantly between March and May among children aged 7 years. The incidence rate of suspected bacterial meningitis was 0.7, 0.3, 0.01, 0.06 and 0.2 per 100,000 population in 2018, 2019, 2020, 2021 and 2022 respectively.

Conclusions

The incidence rates declined in 2020 and 2021 coinciding with the first and second waves of the COVID-19 pandemic. The pandemic had negatively impacted on the existing weak disease surveillance and immunization systems. There is strong need for strengthening of the overall health system through integration of COVID-19 surveillance and vaccination programs with routine immunization services and a need for mass meningococcal immunization campaigns to close the pandemic gap in immunization coverage.