

Prevalence and risk factors for hearing loss in children following bacterial meningitis in Kenyatta national hospital

Abstract:

Bacterial meningitis is the most common etiology for acquired sensorineural hearing loss. The resulting social and educational impairments can be devastating to the individual and to society. By identifying children at risk for development of hearing loss following bacterial meningitis, early rehabilitation may lessen long-term adverse outcomes. Aim: To determine the prevalence and determinants of hearing loss in children between the ages of six months and twelve years admitted to Kenyatta National Hospital with a diagnosis of bacterial meningitis. Study setting: Kenyatta National Hospital pediatric wards, ENT audiology clinic Study design: A prospective cross-sectional study Methodology: Children between the ages of six months and twelve years admitted with bacterial meningitis were sequentially recruited, their histories taken and ears examined to rule out pre-existing hearing losses or ear disease. At discharge following treatment for the bacterial meningitis, age-appropriate hearing testing was administered to evaluate presence and degree of hearing loss. Data was entered in a standard data collection sheet. Degrees of hearing loss and determinants for the same were analyzed. Results: A total of 83 patients (49 males and 34 females) were recruited. Ages ranged from 5 to 120 months (mean age 14 months). Thirty six (44.4 %) were found to have at least a unilateral mild sensorineural hearing loss during initial audiologic testing. Of the children with hearing loss, 22 (26.5 %) had mild or moderate sensorineural hearing loss, and 14 (16.9 %) had severe or profound sensorineural hearing loss. The strong determinants for hearing loss following bacterial meningitis included coma score on admission below eight, development of seizures, concurrent cranial nerve neuropathy, positive (SF culture and fever above 38.7 degrees celsius. This was similar to the findings of studies done elsewhere. Conclusions and Recommendations: Sensorineural hearing loss is highly prevalent in children treated for bacterial meningitis in Kenyatta National Hospital. Strong determinants for hearing loss following bacterial meningitis include coma score on admission of less than eight, development of seizures, concurrent cranial nerve neuropathy, positive (SF culture and fever above 38.7 degrees celsius. This is similar to the findings of studies done elsewhere. There is a need for education of healthcare providers on the determinants for hearing loss following bacterial meningitis and aggressive management of coma, fever and seizures due to their poor prognostic value on hearing. Also, there is need for objective hearing assessment in infants and young children following bacterial meningitis, further studies involving larger population samples and improvement of microbiological workup.