

Research Data Archive, Center for Disease Control, The Executive Yuan, R.O.C.
Readme file

Project Title: The epidemiology, clinical characterizations, and prognosis of invasive
Haemophilus influenzae type b infection

Project Number: DOH97-DC-2016

Executing Institute: 7th branch, centers for disease control

Principal Investigator(P.I.): Lin Hui-Chen

P.I. Position Title: 4th branch, centers for disease control

P.I. Institute: physician of prevention medicine

Abstract:

Background

Haemophilus influenzae type b (Hib) is an important cause of childhood morbidity and mortality, especially in young children. Studies on the incidence of invasive Hib disease, a vaccine preventable disease, varies much in different geographic areas. However, the epidemiology of invasive Hib diseases and the impact of Hib vaccination after its introduction in 1996 has not been studied well in Taiwan.

Methods

We conducted a retrospectively study of 644 cases with invasive Hib diseases reported to National Notifiable Surveillance Systems of Centers Disease Control, a population-based surveillance, between July 1998 and December 2007. We collected the information of patients' demographic, clinical information, and the status of Hib-contained vaccination was collected. The aim of this study was to characterize trends in incidence, clinical manifestations and outcomes of invasive Hib diseases in Taiwan.

Results

During the study period, a total of 322 confirmed cases of invasive Hib diseases were identified. Male to female ratio was 1.5. The median age was 3 years (range 1 day to 95 years). Children aged less than 5 years accounted for 60% of the invasive cases. The overall annual incidence rate of invasive Hib disease decreased from 0.29 /100,000 in 1998 to 0.07 cases/100,000 in 2007. The annual incidence in children aged less five years also decreased from from 2.82 to 0.55 cases/100,000 during the study period.

The common clinical manifestations of invasive Hib diseases were pneumonia (141), meningitis (98), bacteraemia without foci (40), cellulitis (14), septic arthritis (12), and epiglottitis (7), biliary tract infection (6), and peritonitis (3).

Seventy-two patients had co-morbidities. The three most common co-morbidities were malignancy, diabetes mellitus, and chronic obstructive pulmonary diseases.

Three confirmed cases had been vaccinated with Hib vaccines. Among 322 confirmed cases, 40 patients died, 260 survived, and 22 were unknown. The overall case fatality was 13%.

Among 260 survivors, 167 patients had total recovery, and 60 patients developed long-term sequelae, including auditory deficits, motor deficits, and seizures as the three most common sequelae.

Conclusion and Recommendations

Invasive Hib disease, mainly occur in children aged less than 5 years, can cause significant morbidity and mortality in Taiwan. Meningitis, pneumonia, and bacteremia without foci are the major clinical manifestations of invasive Hib diseases. In line with the increased uptake of Hib vaccination in young children, the overall incidence of invasive Hib infections decreased gradually. Additional studies are

needed to evaluate the cost-effectiveness of the universal Hib-contained vaccination, and to monitor if there is an increase of non-type b invasive H. influenzae diseases.

Key words : Haemophilus influenzae type b (Hib), invasive Hib diseases, Hib vaccines