

# Natural Acquired Immunity Against Haemophilus influenzae Type-B in Patients Undergoing Hemodialysis Jahrom, Iran, 2022

Shakeri Masihollah, Rahmanian Vahid, Hooshmand Farhang, Bina Naghmeh, Sotoodeh Jahrom Abdolreza

## Abstract

*Background: End stage renal disease (ESRD) patients who undergo hemodialysis treatment suffer from immune system disorders. The immunodeficiency of these patients makes them prone to various infections.*

*Objectives: To investigate the prevalence of naturally acquired immunity against Haemophilus influenzae type-B (Hib) and its association with the duration of dialysis treatment, gender, and age of patients in hemodialysis patients in Jahrom city, Iran.*

*Methods: This cross-sectional descriptive was conducted on ESRD patients undergoing hemodialysis treatment, referred to Jahrom Hemodialysis Center, June - August, 2022. In order to determine the presence or absence of an immunity to Hib in the patients, the qualitative level of anti-Hib Polyribosyl-ribitol-phosphate (anti-Hib PRP) antibodies in the serum of the patients were determined using the ELISA test using a specialized commercial kit. SPSS-21 was used to analyze the data. The chi-square test, univariate and multivariable logistic regression were used for data analysis.*

*Results: The prevalence of naturally acquired immunity to Hib in patients was 26.13% (10.22% short-term immunity, 15.91% long-term immunity). A significant relationship was found between the prevalence of long-term immunity to Hib in patients and the number of dialysis sessions three times and more per week ( $P < 0.001$ ).*

*Conclusions: Considering that hemodialysis patients in Iran are not vaccinated against Hib, 26.13% prevalence of natural immunity against Hib indicates the same prevalence of Hib infection history in hemodialysis patients. A case-control study with a large sample size on hemodialysis patients is recommended to accurately determine the prevalence of Hib and to decide whether to implement a Hib vaccination program in these patients.*

**Keywords:** Natural Acquired Immunity, Haemophilus influenzae Type-B (Hib), Hemodialysis Patients, Iran