

ISOLATED HEPATITIS B CORE DISEASE AND OCCULT HEPATITIS B AMONG HAEMODIALYSIS COHORT IN MALAYSIA – A SINGLE CENTRE STUDY

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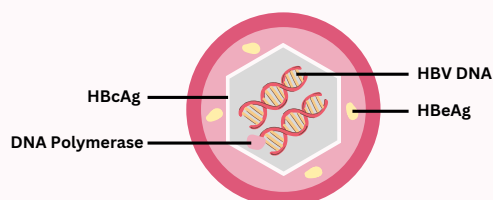
Introduction

What is Occult Hepatitis B Infection (OBI)?

- Presence of **replication-competent HBV DNA**, including episomal covalently closed circular DNA (ccDNA) within the liver and/or at low levels in serum (<104 copies/mL)
- In **HBsAg negative individuals**¹

What are the implications of OBI?

- Increased risk of HBV reactivation and transmission

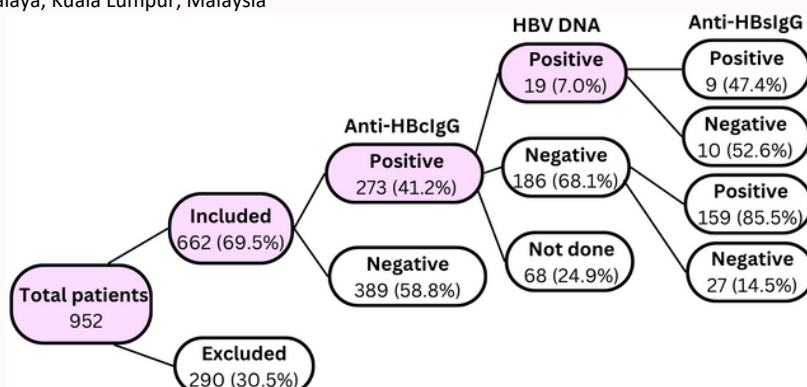
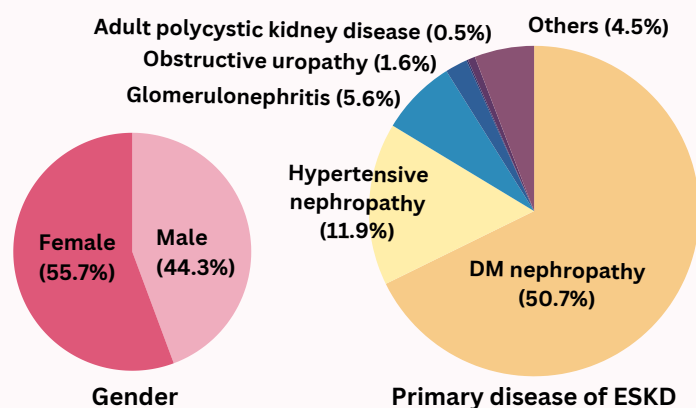


Methods

- Retrospective study at University Malaya Medical Center (UMMC) from 1st January 2019 to 30th June 2024
- Population: Adult End-Stage Kidney Disease (ESKD) patients on regular haemodialysis
- Exclusion criteria: <18 years old, known HBsAg positive or chronic Hepatitis B infection, acute kidney injury (AKI) or chronic kidney disease (CKD), incomplete data
- Electronic Medical Record (EMR) based data collection including patient's demographics, clinical, biochemical information and viral hepatitis serology

Results

- N= 952, mean age 62.6 ± 13.7 years old



Liver Function Test (LFT)	Anti-HBcIgG positive and HBV DNA positive	Anti-HBcIgG positive and HBV DNA negative	P Value
ALT (U/L)	105.7 (7.0, 469.3)	51.1 (7.0, 210.2)	0.286
AST (U/L)	16.0 (9.0, 100.0)	19.0 (14.0, 28.5)	0.651
ALP (U/L)	82.3 (50.0, 125.9)	104.4 (47.3, 217.8)	0.124
GGT (U/L)	45.5 (10.0, 125.4)	47.2 (10.0, 154.8)	0.907
Albumin (g/dL)	26.5 (14.0, 32.8)	25.7 (14.0, 35.0)	0.603

Anti-HBsIgG	Anti-HBcIgG positive and HBV DNA positive (N=19)	Anti-HBcIgG positive and HBV DNA negative (N=186)
0-10	10 (52.6%)	27 (14.5%)
10- 100	6 (31.6%)	54 (29.0%)
>100	3 (15.8%)	105 (56.5%)

**Anti-HBsIgG is considered positive when >10IU/L

Conclusion

- Anti-HBc IgG is positive in 41.2% of the study population.
- Incidence of Occult Hepatitis B infection (OBI) is 7.0%.
- Incidence of positive Anti-HBs IgG among dialysis patients with OBI is high (47.4%).

Clinical Implications

1. Current Ministry of Health Malaysia (MOH) recommends to **check Anti-HBc for possible OBI if Anti-HBsIgG is negative despite vaccination?** However, this study revealed that **Anti-HBs IgG may not be a good indicator for OBI** as about half of OBI patients (47.4%) were Anti-HBs IgG positive.
2. Due to risk of HBV transmission among patients undergoing haemodialysis, **routine testing of Anti-HBc IgG followed by HBV DNA for anti-HBc IgG positive cases might be warranted.**

Reference

1. Daef, E.A., Makhoul, N.A., Ahmed, E.H., Mohamed, A.I., Abd El Aziz, M.H. and El-Mokhtar, M.A. (2017). Serological and Molecular Diagnosis of Occult Hepatitis B Virus Infection in Hepatitis C Chronic Liver Diseases. The Egyptian journal of immunology, [online] 24(1), pp.37–48. Available at: <https://pubmed.ncbi.nlm.nih.gov/29120576/>.
2. Clinical Practical Guidelines on Management of Chronic Hepatitis B in Adults (2023). Ministry of Health, Malaysia