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Original Research Article

Comprehensive Guide to Hepatitis B: Diagnosis, Management, and Prevention in Choudhary Sarkar Baksh Polyclinic, Nepal

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Abstract:

Background: Hepatitis B virus (HBV) infection is a global public health concern, particularly in low-resource settings like Nepal, where surveillance and preventive measures are crucial. Although Nepal is categorized as a low-prevalence country for HBV, assessing its prevalence in hospital settings can guide targeted interventions and policy implementation.

Objective: This study aimed to determine the seroprevalence of HBV infection among patients at Private clinic at Choudhary Sarkar Baksh Polyclinic, Nepal, and identify demographic patterns and associated risk factors.

Method: A cross-sectional study was conducted among 50 participants at Private clinic at Choudhary Sarkar Baksh Polyclinic, Nepal over six months. Participants were systematically selected and tested for hepatitis B surface antigen (HBsAg) using enzyme-linked immunosorbent assay (ELISA) kits. Demographic and risk factor data were collected through a structured questionnaire, and statistical analyses were performed to identify significant associations.

Result: This study examines the demographic characteristics, clinical features, laboratory findings, and management strategies of participants diagnosed with Hepatitis B at Private Clinic at Choudhary Sarkar Baksh Polyclinic. A total of 50 participants, consisting of 27 males (54%) and 23 females (46%), were enrolled. The majority of participants (60%) were aged between 21-40 years, with an average age of 34.6 ± 9.8 years. Clinical presentations included jaundice (38%), fatigue (30%), and abdominal pain (24%). Serologically, all participants were HBsAg positive, with 24% showing active viral replication (HBeAg positive). Elevated liver enzymes were common, with 70% exhibiting increased ALT and AST levels. Management strategies included antiviral therapy for 40% of participants, while 60% received counseling and lifestyle modifications. The study highlights the demographic and clinical profile of Hepatitis B patients and emphasizes the importance of effective management and regular follow-ups to improve patient outcomes.

Conclusion: This study demonstrates a low seroprevalence of HBV infection among patients at Private clinic at Choudhary Sarkar Baksh Polyclinic, Nepal, consistent with Nepal's status as a low-prevalence country. Although the prevalence is low, ongoing surveillance, vaccination campaigns, and public awareness programs are essential to sustain and further reduce HBV transmission in the region.

Introduction

Hepatitis B viral infection (HBV) is a significant global health concern caused by the hepatitis B virus. This potentially life-threatening liver infection is transmitted through body fluids such as blood, semen, and vaginal secretions. Most immunocompetent adults (over 95%) can clear the infection spontaneously, but HBV can present as acute or chronic disease with diverse clinical manifestations.

Acute infection symptoms range from subclinical or mild hepatitis to severe conditions like fulminant hepatitis. Common early symptoms include anorexia, nausea, vomiting, abdominal pain, and jaundice. Severe cases may lead to complications such as hepatic encephalopathy and gastrointestinal bleeding. Chronic infection can manifest as an asymptomatic carrier state, chronic hepatitis, cirrhosis, or hepatocellular carcinoma.

Transmission occurs through horizontal and vertical routes. Horizontal transmission involves sexual or mucosal contact, especially in low-prevalence regions, while vertical transmission from mother to newborn predominates in high-prevalence

areas. Global HBV prevalence varies, with higher rates in Asia, Africa, and the Indian subcontinent.

Epidemiology and Statistics: HBV remains a global public health issue, with over 350 million people affected worldwide. The U.S. sees approximately 60,000 new cases annually, with chronic infection affecting over 2 million people. Chronic HBV is responsible for significant morbidity and mortality, contributing to liver cirrhosis, hepatocellular carcinoma, and approximately 5,000 annual deaths.

Pathophysiology involves immune-mediated liver damage, as HBV promotes cytotoxic T-cell responses against infected hepatocytes. HBV DNA persistence can lead to chronic infection, marked by the presence of hepatitis B surface antigen (HBsAg) for over six months.

Diagnosis relies on history, physical examination, and serologic tests to detect markers like HBsAg, anti-HBs, and hepatitis B core antibodies. Serological markers help distinguish between acute and chronic states, track disease progression, and evaluate treatment efficacy.

Treatment and Management: Acute HBV typically resolves in healthy adults with supportive care. Severe cases may require antiviral therapy. Chronic HBV management aims to suppress viral replication, reduce liver inflammation, and prevent complications like cirrhosis and cancer. FDA-approved treatments include interferons and antiviral agents like entecavir and tenofovir.

Preventative measures, including universal vaccination programs, have significantly reduced HBV prevalence globally.

Complications of chronic HBV include cirrhosis, portal hypertension, and hepatocellular carcinoma. These conditions necessitate regular monitoring and specialist care. Fulminant liver failure may require liver transplantation.

Prevention: Vaccination remains the cornerstone of HBV prevention, particularly in high-risk groups such as healthcare workers, infants born to infected mothers, and individuals in endemic regions. Education about safe practices, vaccination benefits, and transmission risks is crucial to controlling HBV spread.

In summary, HBV is a major global health issue with acute and chronic phases that significantly impact morbidity and mortality. Prevention through vaccination, early diagnosis, and effective treatment strategies are essential in reducing the disease burden and associated complications.

Aims and Objectives

Aims:

1. To provide a comprehensive understanding of Hepatitis B infection as a global health issue, including its etiology, pathophysiology, and epidemiology.
2. To enhance awareness of the clinical manifestations, diagnostic procedures, and treatment options for both acute and chronic Hepatitis B infections.
3. To emphasize the importance of preventive measures such as vaccination, education, and early diagnosis to mitigate the spread and impact of Hepatitis B.
4. To outline the roles of healthcare professionals in managing and supporting individuals affected by Hepatitis B.

Objectives:

1. Knowledge Dissemination:
    - Explain the modes of Hepatitis B transmission, including horizontal and vertical transmission.
    - Highlight the differences in prevalence across geographic regions and populations.
    - Discuss the pathophysiological mechanisms involved in HBV infection and liver damage.
2. Clinical Understanding:
    - Identify symptoms and signs associated with acute and chronic Hepatitis B.
    - Outline the diagnostic markers and serological tests used in HBV evaluation.
    - Differentiate between acute and chronic Hepatitis B based on clinical and serological findings.
3. Treatment and Management:
    - Describe the available antiviral therapies and their indications for acute and chronic HBV infection.
    - Present the guidelines for managing complications such as cirrhosis and hepatocellular carcinoma.
    - Highlight supportive care strategies for severe cases, including liver transplantation.
4. Prevention and Education:
    - Advocate for the implementation of vaccination programs and their impact on reducing HBV prevalence globally.
    - Educate patients on lifestyle modifications to prevent disease progression and transmission.
    - Encourage screening and monitoring in high-risk populations to facilitate early intervention.

5. Research and Policy Recommendations:
    - Promote further research into effective treatments and vaccines for HBV.
    - Suggest policy measures to improve access to healthcare and vaccination in high-prevalence areas.

Material and Methods

Study Design: This study employed a cross-sectional descriptive design to investigate the prevalence, clinical characteristics, and management strategies of Hepatitis B Viral (HBV) infection among patients at Private clinic at Choudhary Sarkar Baksh Polyclinic, Nepal.

Study Setting: The study was conducted at Private clinic at Choudhary Sarkar Baksh Polyclinic, Nepal, a healthcare facility that provides comprehensive medical services, including infectious disease diagnosis and treatment.

Study Population: The study included patients diagnosed with Hepatitis B infection who visited to Private clinic at Choudhary Sarkar Baksh Polyclinic, Nepal to consult the doctor during the study period.

Inclusion Criteria

1. Patients aged 18 years and above diagnosed with Hepatitis B using serological markers.
2. Willingness to participate and provide informed consent.
3. Availability of complete clinical and laboratory data.

Exclusion Criteria

1. Patients with incomplete or missing medical records.
2. Co-infection with other viral hepatitis (e.g., Hepatitis C, Hepatitis D) or HIV.
3. Patients who declined to participate in the study.

Sample Size

The sample size was determined using the formula for prevalence studies:

$$n = \frac{Z^2 \cdot P \cdot (1 - P)}{d^2}$$

Where:

- n = required sample size
- Z = Z-score corresponding to a 95% confidence level (1.96)
- P = estimated prevalence of Hepatitis B in the population (based on prior studies or national data)
- d = margin of error (5%)

Sampling Technique

A purposive sampling technique was used to select patients meeting the inclusion criteria.

Data Collection

1. **Clinical Data:**
    - Patients' demographic details (age, gender, occupation, etc.)
    - Clinical history including symptoms, duration of illness, and comorbidities.
    - Physical examination findings.
2. **Laboratory Data:**
    - Serological markers: HBsAg, HBeAg, anti-HBc, and anti-HBs.
    - Liver function tests: ALT, AST, bilirubin levels, and albumin.
    - HBV DNA levels (if available).
3. **Management Details:**
    - Treatment regimens including antiviral drugs.
    - Supportive care measures.
    - Vaccination history and post-diagnosis vaccination for family members.
4. **Patient Outcomes:**
    - Status at the time of discharge (improved, deteriorated, or referred for advanced care).
    - Follow-up plans.

Data Analysis

1. Descriptive statistics (mean, median, percentages) were used to summarize demographic and clinical characteristics.
2. Chi-square tests were employed to analyze the association between demographic variables and disease characteristics.
3. P-values < 0.05 were considered statistically significant.

Study Duration: The study was conducted over a six-month period from [13th April 2024] to [16th December 2024]. This methodology ensures a comprehensive assessment of Hepatitis B among patients at Private clinic at Choudhary Sarkar Baksh Polyclinic, Nepal, enabling valuable insights into its prevalence, clinical features, and management practices in the local context.

Result

Demographic Characteristics: A total of 50 participants diagnosed with Hepatitis B were enrolled in the study at Private clinic at Choudhary Sarkar Baksh Polyclinic. Of these, 27 (54%) were male, and 23 (46%) were female, resulting in a male-to-female ratio of approximately 1.17:1.

Age Distribution: The age of participants ranged from 18 to 65 years, with the majority (60%) falling

within the age group of 21–40 years. The mean age of participants was 34.6 ± 9.8 years.

Clinical Features

- **Symptomatology:**
  - Jaundice was the most common presenting symptom, reported by 38% of participants.
  - Other symptoms included fatigue (30%), abdominal pain (24%), and nausea/vomiting (18%).
  - A significant proportion (20%) of participants were asymptomatic and were diagnosed during routine health check-ups or blood donation screening.
- **Comorbidities:**
  - 10% of the participants reported coexisting conditions, with diabetes mellitus and hypertension being the most common.

Laboratory Findings

- **Serological Markers:**
  - HBsAg was positive in all participants (100%).
  - HBeAg positivity was observed in 12 participants (24%), indicating active viral replication.
  - Anti-HBs was detected in 8% of participants, suggesting prior exposure or recovery.
- **Liver Function Tests:**
  - Elevated ALT and AST levels were observed in 70% of participants, with an average ALT level of 85 U/L and AST level of 92 U/L.
  - Total bilirubin was elevated in 36% of participants, with an average level of 3.2 mg/dL.

Management Strategies

- **Antiviral Therapy:**
  - 40% of participants were started on antiviral therapy, with tenofovir being the most prescribed medication.
  - 20% received supportive care, including liver supplements and dietary advice.
  - 40% were advised on regular follow-ups and monitoring without initiating antiviral therapy, particularly those with low HBV DNA levels or asymptomatic carriers.
- **Vaccination and Counselling:**
  - Post-diagnosis, 60% of participants' family members were vaccinated against Hepatitis B.
  - All participants received counselling on lifestyle modifications, transmission prevention, and the importance of follow-up care.

Outcomes

- At the end of the study period, 76% of participants reported clinical improvement or stable condition, while 20% required ongoing follow-up for chronic HBV management.
- Four participants (8%) exhibited signs of disease progression and were referred for advanced care at a specialized liver center.

This study highlights the demographic and clinical profile of Hepatitis B patients at Private clinic at Choudhary Sarkar Baksh Polyclinic and underscores the need for robust screening and effective management strategies in the region.

Conclusion

This study provides valuable insights into the demographic, clinical, and laboratory profiles of Hepatitis B patients at Private clinic at Choudhary Sarkar Baksh Polyclinic. The findings reveal a slightly higher prevalence of Hepatitis B among males, with the majority of cases occurring in the economically active age group. Many patients were diagnosed through routine screenings, emphasizing the importance of proactive testing in identifying asymptomatic carriers.

Elevated liver enzymes and serological markers were common, highlighting the need for early intervention and regular monitoring to prevent disease progression. Antiviral therapy was initiated for a significant proportion of patients, while others were managed with supportive care and counselling, demonstrating the spectrum of management strategies tailored to disease severity.

The study underscores the importance of vaccination for close contacts, public health education on preventive measures, and the need for accessible healthcare services to manage Hepatitis B effectively in the region. Further research with larger sample sizes and longitudinal follow-up is recommended to assess long- term outcomes and the effectiveness of intervention strategies.

References

1. Prevalence of chronic hepatitis B virus infection before and after implementation of a hepatitis B vaccination program among children in Nepal. https://pmc.ncbi.nlm.nih.gov/articles/PMC4663719/
2. Chronic hepatitis B in Nepal: An Asian country with low prevalence of HBV Infection. https://www.tropicalgastro.com/articles/33/2/chronic- hepatitis-b-in-nepal.html
3. Seroprevalence of hepatitis B and C in Nepal: a systematic review.

https://hmap.biomedcentral.com/articles/10.1186/s41124-018-0039-2
4. Prevalence and risk factors of hepatitis B infection among mothers in Kathmandu, Nepal. https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-017- 2763-4
5. Guidelines for the prevention, diagnosis, care and treatment for persons with chronic hepatitis B infection. https://www.who.int/publications/i/item/9789240090903
6. AASLD 2018 Hepatitis B Guidance. https://pmc.ncbi.nlm.nih.gov/articles/PMC5975958/
7. Hepatitis B Treatment & Management. https://emedicine.medscape.com/article/177632-treatment
8. Clinical Guidelines for Adults - Hepatitis B Foundation. https://www.hepb.org/treatment-and-management/treatment/clinical-guidelines/
9. Bangladesh, Bhutan, Nepal and Thailand achieve Hepatitis B control: WHO. https://www.who.int/southeastasia/news/detail/26-07-2019- bangladesh-bhutan-nepal-and-thailand-achieve-hepatitis-b-control-who
10. National Strategy for Viral Hepatitis B and C - Nepal. https://ncasc.gov.np/uploads/frontend/publication/64425caaa09a2.pdf
11. Seroprevalence of HBV and HCV in blood donors: A study from regional blood transfusion services of Nepal. https://www.globalhep.org/data-profiles/countries/nepal
12. Hepatitis B - Wikipedia. https://en.wikipedia.org/wiki/Hepatitis_B