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Family Medicine

A Case of Jaundice in a 16-Year-Old Following Viral Infection: A Diagnostic Challenge for the Family Physician

Dr Mustafa S. M. Aljawahery[1*], Dr Shahad Rushdi[2], Dr Basil Omar Bahjat Abdel-hadi[3]

[1]Consultant Family Medicine. MBChB MRCGP
[2]Specialist Family Medicine
[3]Consultant Family Medicine. MBBS MRCGP

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***Corresponding author:** Dr Mustafa S. M. Aljawahery
Consultant Family Medicine. MBChB MRCGP

Abstract **Case Report**

Background: Jaundice in adolescents presenting with nonspecific viral symptoms represents a diagnostic challenge in primary care. Although viral hepatitis and Epstein–Barr virus (EBV) infection are well-recognized causes of hepatic dysfunction, concurrent infection is uncommon and may lead to significant liver enzyme elevation. ***Case Report:*** A 16-year-old previously healthy Lebanese male initially presented to a family physician with cold and flu-like symptoms. He was managed conservatively for a presumed viral upper respiratory infection. One week later, he re-presented with jaundice, dark urine, and malaise. Laboratory investigations revealed markedly elevated transaminases and hyperbilirubinemia. Serological testing confirmed acute Hepatitis A virus (HAV) infection with concurrent EBV infection. The patient was admitted to hospital and managed supportively, with gradual biochemical and clinical improvement. ***Conclusions:*** This case highlights the importance of maintaining a broad differential diagnosis in adolescents presenting with jaundice following viral illness. Early recognition, appropriate investigation, and timely referral by the family physician are essential to ensure optimal outcomes.

Keywords: Jaundice, Adolescent, Hepatitis A, Epstein–Barr virus, Co-infection, Primary care.

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INTRODUCTION

Jaundice is a clinical manifestation of hepatic dysfunction resulting from impaired bilirubin metabolism or excretion. In adolescents, the differential diagnosis is broad and includes viral hepatitis, drug-induced liver injury, autoimmune hepatitis, hemolysis, and metabolic disorders. When jaundice develops following nonspecific viral symptoms, early diagnosis can be challenging in the primary care setting.

Hepatitis A virus (HAV) is a common cause of acute viral hepatitis worldwide and is typically self-limiting, but adolescents and adults frequently develop clinically apparent hepatitis with jaundice and marked transaminase elevation.[1]

Epstein–Barr virus (EBV), the causative agent of infectious mononucleosis, frequently produces mild hepatic involvement, with abnormal liver enzymes reported in up to 80% of cases. Clinically significant hepatitis and jaundice occur less commonly but are well documented. [2,3,5]

Co-infection with HAV and EBV is uncommon and may result in more pronounced hepatic injury due to additive inflammatory mechanisms. [4]

We report a case of HAV and EBV co-infection in a previously healthy adolescent male, illustrating the diagnostic complexity faced by family physicians and emphasizing the importance of early investigation and referral when jaundice develops.

CASE REPORT

A 16-year-old Lebanese male with no past medical history presented to his family physician with a 3-day history of fatigue, low-grade fever, sore throat, and rhinorrhoea. He denied abdominal pain, nausea, vomiting, diarrhoea, or recent travel. Physical examination was unremarkable, and he was diagnosed with a viral upper respiratory tract infection and advised conservative management.

Seven days later, the patient returned with worsening fatigue, anorexia, dark urine, and new-onset

jaundice. His parents reported yellow discoloration of the eyes and skin.

On examination, he was afebrile and hemodynamically stable. Physical findings included:

- Scleral icterus
- Mild, non-tender hepatomegaly
- No splenomegaly
- No ascites or peripheral stigmata of chronic liver disease

The remainder of the systemic examination was normal.

Investigations

Initial investigations performed in the primary care setting demonstrated:

- ALT: 850 U/L (normal <45 U/L)
- AST: 700 U/L (normal <35 U/L)
- Total bilirubin: 4.5 mg/dL (normal <1.2 mg/dL)
- CBC: Mild lymphocytosis with normal total leukocyte count

Given the significant transaminitis and clinical jaundice, the patient was urgently referred to hospital.

Further investigations revealed:

- Hepatitis A IgM: Positive [1]
- EBV viral capsid antigen (VCA) IgM: Positive [2,3]

These findings confirmed acute HAV infection with concurrent EBV infection.[4]
Abdominal ultrasound demonstrated mild hepatomegaly without biliary dilatation or structural abnormality.

Management and Outcome

The patient was admitted for observation and managed conservatively with:

- Adequate hydration
- Rest and activity restriction
- Nutritional support
- Serial liver function monitoring

No antiviral therapy was required, as both HAV and EBV infections are managed supportively. [1,2] Liver enzymes gradually improved over several weeks, and jaundice resolved completely. The patient remained clinically stable and was followed up in the outpatient setting with full biochemical recovery.

DISCUSSION

This case illustrates several important diagnostic considerations for family physicians. Adolescents frequently present with nonspecific viral symptoms, and early manifestations of hepatitis may be subtle or absent. The appearance of jaundice should prompt immediate reassessment and investigation.

HAV remains endemic in many regions and is transmitted via the faecal–oral route. While typically self-limited, it can cause significant hepatocellular injury and jaundice in adolescents and adults.[1]

EBV infection frequently produces mild hepatic enzyme elevation, occurring in up to 80% of cases. However, acute hepatitis with clinically apparent jaundice has been reported in immunocompetent patients. [2,3,5]

Co-infection with HAV and EBV is rare but may result in additive hepatic inflammation, leading to marked transaminase elevation and clinical jaundice.[4] Recognition of this association is essential to avoid misdiagnosis as autoimmune or drug-induced hepatitis.

This case also highlights the pivotal role of the family physician in:

- Recognizing jaundice as a red-flag symptom
- Initiating appropriate laboratory investigations
- Promptly referring patients for hospital assessment
- Providing ongoing follow-up during recovery

CONCLUSIONS

Jaundice in adolescents following viral illness warrants urgent evaluation. Although HAV and EBV commonly occur independently, co-infection can produce significant hepatic dysfunction. [1,4] Family physicians play a critical role in early detection, investigation, and referral, ensuring timely diagnosis and prevention of complications.[5]

Patient: Male, 16-year-old

Final Diagnosis: Acute hepatitis secondary to Hepatitis A and Epstein–Barr virus co-infection

Symptoms: Fatigue • fever • sore throat • jaundice • dark urine

Clinical Procedure:
Specialty: Family Medicine / Hepatology / Paediatrics

Objective: Diagnostic challenge

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