

# Jaundice In Thai HIV-Infected Patients

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## Abstract

A retrospective study of the cause of jaundice among the patients infected with the human immunodeficiency virus (HIV) at different CD4 count status in Bangkok, Thailand, is reported. During the study period, all 250 HIV-infected patients were evaluated for serum bilirubin; 26 of these patients had jaundice (10.40 percent) and included into this retrospective study. Alcoholic liver disease appeared to be the most common cause of jaundice (42.31 percent), followed by opportunistic infections (34.62 percent). Neoplasms were found to be the cause of jaundice in 3 patients (11.54 percent). While drug-induced hepatitis and viral hepatitis B was identified as the cause of jaundice in 2 patients (7.69 percent) and patient 1 (3.84 percent), respectively. Jaundice was found to be common among the patients with advance state of HIV infection than patients in early stage. Although the pattern of jaundice was comparable with previous reports, there is a strikingly lower incidence of drug-induced jaundice was reviewed.

## INTRODUCTION

Human immunodeficiency virus (HIV) infection, a worldwide infection, is a serious problem in the present day. The rather high rate of infection can be found in many zones of the world, including to the Southeast Asia. In Thailand, a tropical country in the Southeast Asia, The HIV infection is the major problem like other countries, about half million of the people are proved to have the HIV infection (1). And it also the possibly higher undetected HIV infection in the community. Hepatobiliary disease is one of health problems among the HIV seropositive patients. Although liver test abnormalities are frequently identified in patients with acquired immunodeficiency syndrome (AIDS), the prevalence of jaundice in Thai HIV - infected patients have not been systematically evaluated. In this study, a study to document the causes, evaluation, and outcome of jaundice associated with HIV infection in the Thai HIV-infected patients at different immunity status was performed.

## MATERIALS AND METHODS

This study was performed as a descriptive study. From January 1, 1999 through December 31, 1999, all human immunodeficiency virus (HIV)-infected patients seen by the clinical chemistry unit service at King Chulalongkorn Memorial Hospital were retrospectively identified. Patients' past and present medical history were taken. Data from medical records of all subjects who were performed a complete physical examination to detect the cause of

jaundice disorders as well as carrying out the necessary diagnostic procedures were included. Furthermore data from CD4 counts determination were also reviewed then all of the subjects were categorized by the immunity status according to 1993 revised classification system for HIV infection by CD4 T-cell categories (2).

Serum total bilirubin determination mentioned in this study was performed at the Clinical Chemistry laboratory, King Chulalongkorn Memorial Hospital using DPD method (Boehringer Mannheim, Thailand). Jaundice in this study was defined as a serum total bilirubin concentration  $> \text{ or } = 3$  mg/dL (3 times of upper normal limit, 1.0 mg/dL). A detailed study about causes, evaluation, and outcome in all HIV - infected patients with jaundice was done. The etiology of jaundice was determined by the pattern of liver biochemistry test abnormalities, radiographic studies, liver biopsy, clinical follow-up, and autopsy. All collected data were analyzed using descriptive statistical analysis. Prevalence of each cause of jaundice was calculated and presented as percentage.

## RESULTS

During the period of study, data of 250 patients infected with the human immunodeficiency virus (HIV) in the setting was performed. During the study period, all HIV-infected patients were evaluated for serum bilirubin level; 26 of these patients had jaundice (10.40 percent) and included into the

retrospective study. The study population consisted of 3 patients (11.54 percent) with CD4  $\geq$ 500/ $\mu$ L (Class A), 11 patients (42.31 percent) with CD4 200 - 499/ $\mu$ L (Class B), and 12 patients (46.15 percent) with CD4 < 200/ $\mu$ L (Class C).

The most common cause of jaundice in this study was alcoholic liver disease occurring in 11 patients (42.31 percent). Opportunistic infections were identified as the cause of jaundice in 9 patients (34.62 percent), with 1 having intrahepatic disease and 8 having extrahepatic disease. Neoplasm were found to be the cause of jaundice in 3 patients (11.54 percent). While drug-induced hepatitis and viral hepatitis B were identified as the cause of jaundice in 2 patients (7.69 percent) and patient 1 (3.84 percent), respectively (Table 1). The prevalence of each cause of jaundice was shown in Table 2. Conditions with prevalence higher than 5% among the total subjects were also included. Considering the patients with CD4  $\geq$ 500/ $\mu$ L, the most common cause of jaundice was alcoholic liver disease. Concerning the patients with CD4 = 200 - 499/ $\mu$ L, the most common cause of jaundice was alcoholic liver disease. While the most common of jaundice among the patients with CD4 < 200/ $\mu$ L was extrahepatic opportunistic infection. The short-term mortality was high (5 cases, 19.23 percent), with 1 patients dying during the hospitalization (3.84 percent) and 4 patients (15.38 percent) dying within 6 months of evaluation. Liver disease was diagnosed to be the cause of death in all of these patients but no autopsy cases was available.

**Figure 1**

Table 1: Types of disorder in HIV-infected patients.

disorders	Number of cases			Total
	CD4 $\geq$ 500/ $\mu$ L (N = 3)	CD4 200 - 499/ $\mu$ L (N = 11)	CD4 < 200/ $\mu$ L (N = 12)	
Alcoholic liver disease	2	8	1	11
Opportunistic infections				
◆ Intrahepatic disease	0	0	1	1
◆ Extrahepatic disease	0	0	8	8
Neoplasm	0	1	2	3
drug-induced hepatitis	1	1	0	2
viral hepatitis B	0	1	0	1

**Figure 2**

Table 2: Prevalence of disorder in HIV-infected patients.

disorders	percentage			Total
	CD4 $\geq$ 500/ $\mu$ L (N = 3)	CD4 200 - 499/ $\mu$ L (N = 11)	CD4 < 200/ $\mu$ L (N = 12)	
Alcoholic liver disease	7.69	8	3.84	42.31
Opportunistic infections				
◆ Intrahepatic disease	0	0	3.84	3.84
◆ Extrahepatic disease	0	0	30.78	30.78
Neoplasm	0	3.84	7.69	11.54
drug-induced hepatitis	3.84	3.84	0	7.69
viral hepatitis B	0	3.84	0	3.84

**DISCUSSION**

Hepatobiliary disorder is an important problem in HIV-infected patient. Human immunodeficiency virus (HIV) may be associated with a large number of hepatobiliary manifestations, which may at times constitute the presenting symptoms. Jaundice is a common presentation of hepatobiliary diseases. The causes of jaundice in HIV-infected patients are well delineated in the Western literature<sup>(3,4,5,6)</sup>, but there is only a paucity of information from the Southeast Asia region. In this study, the prevalence of cause of jaundice among the Thai HIV-infected patients with different immunity status was investigated. From this study, only ten percent of all patients were observed to have jaundice. This low prevalence goes along with the previous report<sup>(3,4)</sup>. Alcoholic liver disease, including alcoholic hepatitis, appeared to be the most common cause of jaundice (42.31 percent), followed by opportunistic infections (34.62 percent). From this data, the importance of alcoholic consumption as cause of liver disease among the Thai can be confirmed<sup>(7)</sup>.

Classified by the CD 4 T-cell categories, in the early state of HIV infection (CD4  $\geq$ 500/ $\mu$ L), jaundice also occurred less than the late state. Subjects in the Class C subgroups were found to have a significantly more number of opportunistic infections and neoplasm induced jaundice than patients in Class A and B. Extrahepatic opportunistic infections was identified as cause of jaundice among the patient more than intrahepatic opportunistic infections. Mycobacterium complex was identified as cause of infections in all cases. Therefore, the importance of mycobacterium infection as a common infection among the tropical region can be stated. Considering the neoplasm group, lymphoma was also the only identified neoplasm. Considering the drug-induced hepatitis, the identified agents were allopurinol in one case and rifampicin in the other case. Comparing to the 30 percentage of drug-induced hepatitis as cause of jaundice in the previous study, rather low prevalence was found in our series.

Although the prevalence of jaundice was comparable with that from the West (3), there is a strikingly lower incidence of drug induced hepatitis was reviewed. Four notable differences, however, emerge from this study: (1) the high prevalence of alcoholic liver disease as cause jaundice in all subgroups of subjects, (2) the high prevalence of atypical microbacterium complex, a tropical disease, as cause of jaundice in subjects with advanced disease, (3) the low prevalence of drug-induced hepatitis and (4) the rather low of viral hepatitis B as the identified cause although the high prevalence of hepatitis B infection was identified in Thailand, in the study population. Knowledge about the pattern of jaundice in the local population will be more clinically relevant for proper care of the patients. In conclusion, jaundice is uncommon in AIDS and may result from a variety of both opportunistic and non-opportunistic etiologies. Alcoholic liver disease is the most common cause of jaundice among Thai HIV-infected patients. This

manifestation may be fatal and long-term survival is poor.

### **References**

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