

Ultrasonography of the Liver in AIDS Patients among Sudanese Population

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Abstract – The main objective of this study was to evaluate the liver parenchyma echogenicity in AIDS patients, and performed as a Prospective evaluation of known AIDS patients using abdominal ultrasonography of 50 patients concerning on liver's Echogenicity, liver parenchymal texture. The effect of age, gender, abnormality findings and onset was statistically analyzed. Out 50 cases with known AIDS, 22 (44%) were females; their age was ranged between (41–50 years). The disease was most prevalent in the 4th decade with an incidence of 36%. AIDS patients were found to have a high prevalence of underlying hepatic abnormalities. The results suggest that hepatic tuberculosis is more common in AIDS than previously recognized more studies are recommended on portal hypertension

Keywords – AIDS, Ultrasound, Portal Hypertension Sudan.

I. INTRODUCTION

The first reports of homosexual patients suffering from previously rare diseases such as pneumocystis pneumonia and Kaposi's sarcoma were published in May 1981. It soon became clear that the new disease affected other population groups as well, when the first cases were reported in injecting drug users. However, it took almost two years until, in 1983, the human immunodeficiency virus was defined as the primary cause of the acquired immunodeficiency syndrome, now HIV infection has changed from a fatal condition to a manageable chronic illness. [1].

HIV/AIDS has now reached epidemic proportion in all Sub-Saharan African countries endangering not just the lives of its victims but also the social and economic fabric of society. Most health institutions in the sub region including Sudan are not adequately equipped to properly evaluate the HIV/AIDS patient and the complications that often arise from the condition. Its infectious and non-infectious complications can be overwhelming and may be impossible to diagnose accurately in developing countries because of lack of diagnostic facilities [6-7].

Areas affected by AIDS include central nervous system (limitation of ultrasound imposed by bones), respiratory system (ultrasound imposed by air in lung), abdominal retroperitoneal and superficial. Sonographic findings are prevalent non-specific abdominal abnormalities associated with AIDS include splenomegaly, hepatomegaly, hyperechoic liver parenchyma, gallbladder wall thickening, Lymphadenopathy and nephropathy [2].

Hepatic pathology associated with AIDS includes Cardiac dysfunction, which is common in patient with AIDS particularly IV drug abusers (abdominal Sonographic findings indicative of cardiogenic congestion include hepatomegaly and dilation of hepatic vein and (IVC), non-Hodgkin's lymphoma (25% have focal lesion), hepatocellular carcinoma HCC, Kaposi's sarcoma (small hyperechoic nodules and preportal thickening) and liver micro abscesses (usually <1cm most common fungal infection) [2].

A. Objective: To evaluate the liver parenchyma echogenicity in AIDS patients. and to maintain the efficiency of ultrasound in evaluating the liver in AIDS patient as suitable modality.

II. MATERIALS AND METHODS

A. Ultrasound Equipment

This study was performed using different ultrasound scanners available at the areas of study such as Aloka prosound SSD 4000 (Aloka holding Europe AG, Switzerland), Toshiba Nemio 20 (Toshiba, Japan), Siemens sonoline G60S (Siemens, USA), and Shimadzu SBU 2200 (Shimadzu Europe GmbH, Germany). All of these scanners drive convex probes produce a frequency of 3.5 MHz; also they were connected with printing facility through digital graphic printer (Mitsubishi Corporation, Japan).

B. Sample Size

A group of fifty (50) AIDS patients with different ages and sex ranging from six years up to sixty years of ages were approached (Table 1). The patients were told to prepare themselves carefully for the scan by abstaining from food for the last 6 hours, to drink fluids for the first three hours and fasting from food and to abstain from drinking fluids for the last two hours in two ultrasound departments at Omdurman Teaching Hospital, Bashaier Teaching Hospital at Khartoum State, Sudan.

C. Testing Procedure (Protocol)

The patients were told to prepare themselves carefully for the scan by abstaining from food for the last 6 hours prior to investigation with continuous taking their drugs, imposing dietary restrictions, walking for 30 min before the examination, water contrast [3]. (Harleid 2007) Usually the examination was carried out with the patient in supine position [2].

D. Statistical Analysis Used

The data was analyzed using computer software known by SPSS version 16.

III. RESULTS AND DISCUSSION

Of the 50 cases, 22 (44%) were females; their age was ranged between (41–50 years). The disease was most prevalent in the 4th decade with an incidence of 36%.

Table 1: Age group distribution in HIV+ Patients

| Age | Frequency | Percent% |
|--------------------|-----------|----------|
| Less than 20 years | 1 | 2% |
| 20 – 30years | 12 | 24% |
| 31 – 40years | 16 | 32% |
| 41– 50years | 18 | 36% |
| 51 – 60years | 3 | 6% |
| Total | 50 | 100% |

The table findings matched with comparable study by Tshibwabwa et al in a similar environment [6]. Their study showed a higher male prevalence. (Figure 1).

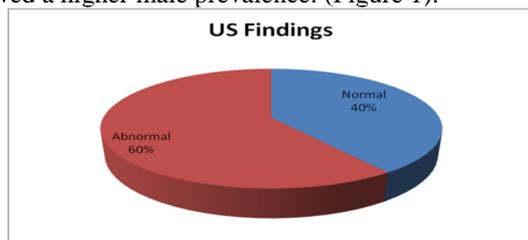


Fig.1. Abdominal Ultrasound Findings

The report of hepatic findings in this study is noticed for the frequency of portal hypertension (26%) (Figure 2) which is differ from [4] study performed by Langer et al., 1993 they didn't find any case of portal hypertension in their study and also differ from [5] study done by Lanjewar et al, 2004.

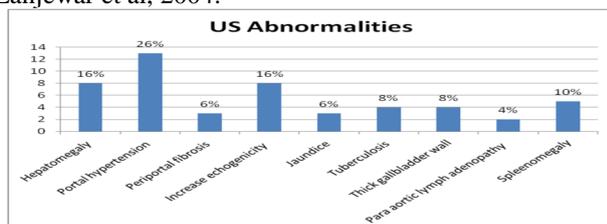


Fig.2. Abdominal Ultrasound abnormalities findings

In this study fatty liver (bright liver), were 8/30 (16%) patients which matches the study of Langer et al., 1993 [8] and but it differ from the study of Lanjewar et al, 2004 [5] they didn't report any case of fatty liver, Lymphadenopathy as demonstrated on abdominal ultrasound was a relatively infrequent finding only seen in two patients (4%) which is agree with study performed by Langer et al., 1993 [8] they reported it in their study. In 16% (8/30 patents) an enlarged liver were diagnosed, in 10% (5 patients) an enlarged spleen were diagnosed and this matches with Langer et al., 1993[8] they reported hepatosplenomegaly in their study, but it disagrees with

previous reports [3,5,8,9]. Yee et al [10] and Geoffray et al [11], identified splenomegaly in 45% and 32.5% of their patients respectively as high incidence.

IV. CONCLUSION

The Conclusions of this study was AIDS patients were found to have a high prevalence of underlying hepatic abnormalities.

RECOMMENDATIONS

The results suggest that portal hypertension is more common in AIDS than previously recognized. More researches and studies should be done on this topic.

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