

# Liver Transplantation in HIV-Infected Patient

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## ABSTRACT

HIV infections have always been a stigma, and the majority of transplant centres avoid liver transplantation in patients having end-stage liver disease patients with HIV coinfection. HIV patients with end-stage liver disease having undetectable HIV viral load, CD4<sup>+</sup> cell count of >100/ml, and negative history of AIDS-specific opportunistic infections are considered suitable candidates for liver transplantation. Fulfilling the above-mentioned criteria, we performed successful living donor liver transplantation (LDLT) procedure on a 58-year-old gentleman who presented with end-stage liver disease and HIV coinfection.

**Key Words:** HIV, Living donor, Liver transplantation.

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## INTRODUCTION

Human immunodeficiency Virus (HIV) infection is one of the few serious health challenges worldwide in the present era.<sup>1</sup> The disease prevalence had been changing with time and currently it has been displaying a decreasing trend since the last decade.<sup>1,2</sup> According to WHO, Pakistan is considered an HIV-concentrated epidemic zone. A total number of 150,000 were reported in 2017.<sup>3</sup>

The treatment regimens for HIV infection kept upgrading over time. The triple antiretroviral combination therapy was introduced at the Vancouver AIDS conference in 1996. These drugs have markedly reduced AIDS-related mortality and morbidity universally.<sup>2</sup> But still HIV infection is considered a stigma, and most transplant centres avoid liver transplantation in HIV-infected patients having liver failure. HIV-infected patients with an undetectable HIV viral load, CD4<sup>+</sup> cell count of >100/ml, and negative history of AIDS-specific opportunistic infections are considered suitable candidates for liver transplantation.<sup>4</sup>

Here, we report a living donor liver transplantation (LDLT) procedure in a 58-year-old gentleman with end-stage liver disease and HIV coinfection.

## CASE REPORT

A 58-year-gentleman, presented with a history of generalised weakness and abdominal distension for the last 2 months. He was previously treated for HBV- and HDV-related liver disease six years ago. He was also recently diagnosed with HIV-1 infection, 5 months ago, and was started on antiretroviral drugs, i.e., HAART regime. He was having no history of AIDS-related opportunistic infections.

His vitals were within normal range. However, his abdominal examination showed a distended abdomen with dullness over the flanks. His HIV, HBV, and HDV viral PCRs showed a minimum titer. Contrast-enhanced CT scan of a Abdomen showed a shrunken irregular liver, moderate ascites, and two arterialised lesions of 2×2 cm and 2.5×2 cm with venous washout. His Child-Pugh scoring was 10 C and MELD-Na of 26 and AFP level of 197.1 (10 ng/mL to 20). His CD4<sup>+</sup> cell count was 375/ml. He was offered a living donor liver transplantation.

After a detailed workup, and counselling, LDLT procedure was performed. A right lobe graft without MHV was implanted with the piggyback technique. Intraoperative doppler study and cholangiography were normal. Postoperatively immunosuppressant therapy i.e. oral tacrolimus was started on the 1<sup>st</sup> postoperative day. HAART therapy was also resumed on 1<sup>st</sup> postoperative day. The patient remained in ICU for four days. He was discharged on the 10<sup>th</sup> postoperative day in stable condition. Standard precautions were taken during the procedure and his hospital stay. At 1-year follow-up, the patient is clinically stable and all the lab reports including viral PCRs are in the normal range.

## DISCUSSION

Studies have suggested that HIV-positive patients with cohepatic viral infections are more prone to develop hepatic fibrosis.

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HIV infection was considered a contraindication for liver transplantation before the introduction of triple antiretroviral combination therapy. However, the introduction of these highly effective drugs made a good outcome of liver transplantation in HIV positive recipients.<sup>5</sup>

The hurdles due to which the majority of liver transplant centres in developing countries avoid liver transplantation in HIV-infected patients even if they fulfil the criteria are lack of awareness, and clinicians' reluctance. Moreover, theoretically, there is more risk of getting opportunistic infections with the use of post transplant immunosuppressive therapy. It might be one of the other reasons that these patients are not offered transplantation. However, recent studies have reported good outcomes of transplantation in HIV patients in spite of the use of immunosuppressant therapy.<sup>6</sup>

Liver transplantation should be offered to HIV-infected patients with end-stage liver disease if they full fill the criteria of enough CD4<sup>+</sup> cell count (at least greater than 100 cells/ml) with suppressed HIV mRNA levels on PCR and no evidence of any of the AIDS-defining opportunistic infections. They should be considered equally good candidates for liver transplantation as HIV-negative recipients.

In summary, this case underscores the need to consider live-related liver transplantation in patients with end-stage liver disease at concurrent controlled HIV infection.

#### **PATIENT'S CONSENT:**

Written informed consent was obtained from the patient.

#### **COMPETING INTEREST:**

The authors declared no competing interest.

#### **AUTHORS' CONTRIBUTION:**

AW: Supervision and revision of the manuscript.

KU: Concept and drafting of the manuscript.

SU: Data collection.

HBA: Drafting and literature review.

All the authors have approved the final version of the manuscript to be published.

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