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## CASE STUDY

### FULMINANT HIV 2 INFECTION-AN UNUSUAL PRESENTATION

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#### ABSTRACT

We are reporting a case of HIV 2 infection from Kolkata, West Bengal, India. There are case reports of HIV 2 infection from western and southern parts of India, but reports from Eastern India are rare. Also this is an isolated case of HIV 2 infection in which diagnosis to death was very rapid. The patient was admitted with a diagnosis of HIV-2 infection and CD4 count of 42. He was diagnosed to have Pulmonary Tuberculosis and anaemia. The patient was discharged with proper treatment. He was admitted after one month with extreme deterioration in his condition and some more opportunistic infections. He succumbed. Total period of contact with us from diagnosis of HIV-2 to death was a little above one month.

#### INTRODUCTION

AIDS pandemic is spreading unchecked in almost every parts of the world. Currently more than 34 million individuals are infected with human immunodeficiency virus (HIV). In India 3.5 million people are HIV seropositive as estimated by National AIDS Control Organization. Although majority of infections are due to HIV Type-1 (HIV-1) strains, HIV Type-2 (HIV-2) infections have been reported from many countries including southern and western part of India. During a recent survey for HIV among the female sex workers and their clients in Kolkata, five cases with single HIV-2 infection were found (Chakrabarti, 2003-2004). However, report from eastern part of India is rare.

#### The Case Report

50 year old man was admitted with history of fever and loose motion for one month and vomiting for last one week. He had tested HIV 2 positive in early 2015 by ELISA method. Further the presence of HIV-2 antibody was confirmed by Western blot analysis. The route of acquisition was probably by sexual route. He was also recently diagnosed to have pulmonary tuberculosis and Cat I Anti tubercular regimen was started. His Haemoglobin (Hb) was 5.4 g % for which he was given four units of Packed Cell RBCs (PCRBC).

Liver function test and Urea and Creatinine were within normal limits. CD4 count at the time of admission was 42. He was started on second line Anti-Retroviral Treatment (TDF, 3TC, LPV, r'). After PCRBC transfusion, his Hb increased to 9.3g% and he was discharged. One month later, he was admitted with complaints of anorexia and pain on swallowing solid food. On examination he was anaemic, hypotensive, pulse was 110/min, nutritional status was poor, oral candidiasis was seen and respiratory rate was 30/min. Chest examination revealed occasional crepitations in left lower lobe. Cardiovascular examination and Gastrointestinal system examination was unremarkable. No neurodeficit was observed. His blood picture showed lymphocytic leucocytosis (13200/cumm), Chest X Ray and Ultrasonography upper abdomen was normal. Urine culture showed growth of *Enterobacter aerogenes*. Antibiotics were started according to sensitivity report along with fluconazole. He continued his anti tubercular treatment along with second line ART. Unfortunately the general condition of the patient deteriorated rapidly and the patient had multiple seizures. He was planned for CT scan brain during which he developed aspiration pneumonia and succumbed within 2 days.

#### DISCUSSION

HIV Type-2 was first identified in 1986 in West Africa and subsequently from other places. HIV-2 was initially found in West Africa but has spread to other parts of Africa, Europe,

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India and the United States. The envelope antigen of the two HIV strains is different but there is some cross-reactivity in the core polypeptides. HIV 2 has only 40% genetic identity with HIV1 and is more closely related to Simian Immunodeficiency Virus (SIV) causing Simian AIDS in sooty mangabeys (SIV-SM) and Rhesus macaque (SIV-MAC) (Ananthanarayan and Jayaram Paniker, 2013). Although HIV-1 and HIV-2 share common transmission routes, they show a clear and distinct epidemiology. Viral load in case of HIV 1 is usually moderate to high but in case of HIV 2, it is usually undetectable. While HIV-1 infection leads to severe immune dysfunction and the development of AIDS within a median time of 10 years, HIV-2 usually takes decades to accomplish that. A longer asymptomatic phase and slower progression to AIDS are indeed hallmarks of the natural course of HIV-2 infection (Whittle *et al.*, 1994), (Poulsen *et al.*, 1997), (Marlink *et al.*, 1994). Scarce and sometimes conflicting results are obtained regarding susceptibility to other anti-retroviral drugs.

### Interesting Facts of HIV-2

- HIV-2 infection is notable for a longer asymptomatic phase and slower progression to AIDS than HIV-1 infection.
- HIV-2 patients are less infectious early in the course of infection and HIV-2 is less transmissible from an infected mother to her child
- Non-Nucleoside reverse transcriptase inhibitors (NNRTI) and fusion inhibitors (Enfluvirtide) are not active against HIV-2. Effectivity of Maraviroc (CCR5 Antagonist) is uncertain.
- HIV-2 patients are treated by Nucleoside analogs and Protease inhibitors and integrase Inhibitors (Raltegravir, Elvitegravir)
- Monitoring treatment response of HIV-2 infected people is difficult (as no FDA licensed HIV-2 viral load assay is available).
- The optimal timing for initiation of anti-retro viral therapy remains vague (Omobalagi *et al.*, 2011)

Little is known about the optimal management of HIV-2 infection. However in our case, the patient was diagnosed with HIV-2 along with Pulmonary Tuberculosis, severe anaemia and CD4 count of 42 at presentation in 2015 and succumbed to his illness 1 month later. HIV-2 infection is not uncommon in India but case reports from Eastern India are rarely obtained. Strikingly, this case depicted a fulminant course of HIV-2 illness, which resulted in death in 1 month. Another important but paradoxical finding was a very low CD4 count of 42 at admission which was just two days after detection of HIV-2. Usually CD4 count remains steady for several years. Although HIV-2 is less pathogenic than HIV-1, some patients can develop profound immunosuppression along with AIDS related condition which can lead to death. Obviously our case fell in this second category. Hence a lot still remains to be known about this pathogen and how it reacts with the human system.

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