Body: Background: Nucleoside reverse transcriptase inhibitors (NRTIs), a common backbone of highly active antiretroviral therapy (HAART), are frequently used for post-transplant HAART therapy. NRTIs have a rare, but fatal consequence of mitochondrial toxicity, manifesting as severe lactic acidosis and hepatic steatosis. We report on the first known successful treatment of severe mitochondrial toxicity using a novel protocol of acetylcysteine and antioxidants in an HIV-infected liver transplant recipient.

Case: A 52-year-old male with a history of HIV, well-controlled on HAART therapy, underwent liver transplantation for non-cirrhotic nodular regenerative hyperplasia (NRH), complicated by hepatocellular carcinoma. His post-transplant course was unremarkable until seven months post-transplant, he presented acutely with complaints of severe malaise and poor oral intake. He was found to have a profound lactic acidosis with lactate of 16.7 mmol/L, marked transaminitis and hyperbilirubinemia. HAART therapy was immediately discontinued and he was started on a protocol of acetylcysteine (100mg/kg infusion, then 600mg twice daily) and Vitamins C and E. The patient's liver enzymes completely normalized two months after injury (Figure 1).

Conclusions: Antioxidant therapy using Vitamins C and E and acetylcysteine may improve outcomes in this often fatal consequence of NRTI mitochondrial toxicity. As this is the first known case of survivable mitochondrial toxicity post-liver transplant, this regimen may prove beneficial for future cases.