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Hepatotoxicity in patients co-infected with HIV and tuberculosis while receiving NNRTI-based antiretroviral regimen and rifampicin

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Objective

To evaluate the rate of and risk factors associated with hepatotoxicity in tuberculosis (TB) and human immunodeficiency virus type 1 (HIV-1) co-infected patients while receiving nonnucleoside reverse transcriptase inhibitors (NNRTI)-based antiretroviral therapy (ART) and rifampicin (RMP)-containing anti-TB regimens.

Methods

We analyzed data from an open label, randomized, comparative trial comparing treatment outcome between 71 TB/HIV-1 co-infected patients receiving efavirenz (EFV)-based and nevirapine (NVP)-based ART and all were receiving RMP containing anti-TB regimens. Demographic data, liver function profile, CD4 cell count, plasma HIV-1 RNA, hepatitis B surface antigen and anti- hepatitis C virus antibody were collected before initiating ART (week 0). Liver enzymes and total bilirubin level were monitored at 6 weeks, 12 weeks and 24 weeks after ART initiation. All patients were followed until TB therapy was completed or 24 weeks after ART initiation if TB therapy was not completed.

Results

Of 134 patients, mean (SD) age was 36.8 ± 8.6 years and 67.2% were male. HCV co-infection was found in 23.9% of patients. Severe hepatotoxicity (grade 3 or 4) developed in 4 (23.9%) patients; 3 patients in NVP group and 1 patient in EFV group (P=0.355). Severe hyperbilirubinemia (grade 3 or 4) occurred in 5 (7.7%) patients in NVP group and 2 (2.9%) patients in EFV group (P=0.264). By univariate analysis, cotrimoxazole use (OR, 2.65; 95%CI, 0.99-7.02) and HCV co-infection (OR, 3.40; 95%CI, 1.49-7.37) were associated with grade 1-4 hepatotoxicity. By multivariate analysis, HCV co-infection (AOR, 3.03; 95%CI, 1.26-7.29) was the only independent risk factor associated with grade 1-4 hepatotoxicity.

Conclusion

Monitoring of hepatotoxicity should be considered in TB/HIV-1 co-infected patients who infected with HCV and receiving NVP.

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