CD4+ T CELL RECOVERY IN HIV/HCV CO-INFECTED PATIENTS FOLLOWING HCV TREATMENT

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Background: An estimated 12-30% of people living with HIV do not demonstrate robust CD4+ T cell recovery despite durable viral suppression on ART. HCV co-infection has been identified as a risk for impaired CD4+ recovery and this may be driven by HCV-mediated liver fibrosis. As HCV direct acting antiviral therapy (DAA) may partially reverse liver fibrosis, sustained HCV virologic response (SVR) may hypothetically lead to improved CD4+ T cell recovery. Our objective was to assess the effect of HCV DAA -induced SVR on CD4 recovery among HCV/HIV co-infected patients, including immunological non responders (INR).
Methods: Subjects ≥18 years seen from 2015 - 2019 at the UMB outpatient HIV/HCV program, and who were treated with DAA and achieved an SVR were included. Pre-DAA CD4 counts were included only after sustained HIV viral suppression (<200 cpm for ≥2 years) and HIV viral suppression was maintained for the entire period of the study. Descriptive statistics were used to illustrate baseline characteristics. Segmented regression of interrupted time series analysis was used to evaluate changes in median CD4 count in the pre-DAA period (36 mo) vs post-DAA period (36 mo).
Results:
156 patients of whom 68% were male and 90% were African American were included. The mean age at DAA initiation was 56.5 years. Mean duration of HIV suppression prior to first pre-DAA CD4 assessment was 3.8 years. In the full cohort median CD4 counts increased by 15% (p=0.002, Figure 1) in the 6 month period following DAA initiation, whereafter CD4 counts decreased 2.7% per 6 month period (p=0.004). Among the 13 patients who qualified as INR, there was no immediate effect on median CD4 in the first 6 months after DAA initiation. However, thereafter there was a sustained effect on CD4 increase (median CD4 increasing by approximately 4.1% per 6-month time interval (p=0.02). 54% of INR were able to achieve a post-DAA CD4 count of >350 cells/mm3.

Conclusions: Successful DAA therapy induced a modest immediate CD4 immunologic reconstitution among this cohort of HIV/HCV co-infected patients though this effect waned with time. By contrast, among INR, achieving HCV SVR led to more slowly gained but sustained CD4 count recovery.
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