**Effect of Online Education on Physician Knowledge and Confidence for the Immunological Drivers of Depletion and Recovery for CD4 T Cells and Implications of Non-Response in HIV-Positive Individuals**

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**BACKGROUND**

Progressive depletion of CD4 T cells is the hallmark of untreated HIV infection and involves multiple mechanisms such as direct and cytotoxic T-lymphocyte killing of infected T cells. Antiretroviral therapy (ART) is key to reversing T cell depletion. However, some HIV-positive individuals fail to adequately recover T cells despite optimized ART. We assessed whether online independent medical education could improve the knowledge of both HIV specialists and primary care physicians (PCPs) regarding immunological mechanisms of CD4+ T cell depletion and factors associated with poor CD4+ T-cell gain in HIV-positive individuals receiving ART.

**METHODS**

The continuing medical education intervention comprised a 30-minute online video lecture with animation. Activity was launched 20th February 2020. Data collected 19th May.

**PRE-ASSESSMENT**

- HIV specialists (n=96)
- Primary Care Physicians (PCPs) (n=74)

**POST-ASSESSMENT**

- HIV specialists (n=96)
- Primary Care Physicians (PCPs) (n=74)

**RESULTS**

**QUESTION 1 RESULTS**

Significant knowledge gain regarding factors associated with poor CD4 T cell recovery in an optimized ART setting.

**QUESTION 2 RESULTS**

Significant and clinically meaningful knowledge gains regarding how both CD4 T cells and patient-related factors affect HIV pathogenesis and the clinical course of the disease.

**CONCLUSIONS**

ART is key to reversing CD4 T cell depletion caused by HIV infection. But CD4 T cell recovery can be affected by certain factors such as age and comorbidities. Furthermore, some heavily pretreated patients fail to recover CD4 T cells despite optimized ART due to immune exhaustion. Therefore, it is important that physicians involved in the care of patients with HIV have appropriate knowledge regarding aspects of CD4 T cell depletion and recovery. This online medical education significantly improved physician knowledge and confidence in the immunological mechanisms associated with CD4+ T-cell depletion and recovery, clinical predictors, and patient-associated factors of inefficient CD4+ T-cell gain in HIV-positive individuals, despite optimized ART.

**REFERENCES**

8. Lataillade M, Lalezari J, Aberg J, et al. Week 96 safety and efficacy of the novel HIV-1 attachment inhibitor prodrug fostemsavir in heavily treatment-experienced pretreated patients fail to recover CD4 T cells despite optimized ART due to immune exhaustion. Furthermore, some heavily pretreated patients fail to recover CD4 T cells despite optimized ART due to immune exhaustion.

**ACKNOWLEDGEMENTS**

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