Protecting Mucosal immunity in HIV positive people with combined CCR5/Integrase Inhibitors

One of the pathologic events in HIV-infected individuals is the systemic inflammation caused by gut damage and translocation of microbial products into the circulation. This is known to result in immunologic dysregulation and morbidity. The key question is whether a successful ARV regimen would protect gut damage and disruption to the gut associated lymphoid tissue.

The effects of first-line ARV in gut tissue remains unexplored and in the January edition of PLoS Pathogens, Serrano-Villar et al show that restoration of mucosal immune abnormalities following initiation of ARV “might depend upon gut tissue penetration and could be affected by initiating ART with a combined CCR5 and integrase inhibitors-based regimen”. Their findings show the benefit of combining CCR5 and an integrase inhibitor (maraviroc and raltegravir) in a first-line ARV regimen.

The authors suggest that combining CCR5 and integrase inhibitors as a first-line regimen in ARV treatment-naïve patients might more effectively “reconstitute duodenal immunity, decrease inflammatory markers and impact on HIV persistence by cell-dependent mechanisms”. They suggest that the unique effects of maraviroc is driven by higher drug tissue penetration within the intestinal tissue. The authors

conclude that targeting mucosal immune dysfunction and chronic inflammation with drug regimens that spare HIV-mediated immune damage in lymphatic tissues could also be part of the "armamentarium" in future strategies to reduce HIV reservoirs.

Serrano-Villar, S. et al. 2016. Effects of Combined CCR5/Integrase Inhibitors-Based Regimen on Mucosal Immunity in HIV-Infected Patients Naïve to Antiretroviral Therapy: A Pilot Randomized Trial. *PLOS*.