Treatment with μ-opioid receptor antagonist improves immune recovery in people with HIV and OUD (AMOHI study)

Livio Azzoni, Cecile Denis, Kevin Lynch, Vincent Trias, Thuy Huynh Thu, Dang Thi Nhat Vinh, Le Chi Thanh, Daniel Scott-Algara, Gilles Raguin, Jean Pierre Daulouède, David Metzger, Luis J. Montaner

The Wistar Institute

Aim: Both HIV infection and opioid use result in intestinal dysbiosis, microbial translocation, and immune dysfunction. We studied the effects of MOR agonists and antagonist medication for opioid use disorder (MOUD) on immune reconstitution in people with OUD and HIV starting OUD treatment in Ho Chi Minh City, Vietnam.

Methods: Participants with HIV (ART-naive or on ART for <6 months) and OUD were randomized to methadone (MET), buprenorphine (BUP), or extended-release naltrexone (XR-NTX), and observed for 48 weeks. Cox proportional hazards regression models were used to compare the groups on dropout through week 24. Viral suppression (<20 copies/ml) was assessed using negative binomial regression. The effect of time and MOUD on CD4 counts and sCD14 (biomarker for monocyte activation and bacterial translocation) were assessed fitting mixed effect models.

Results: 78 participants (mean age 42 years, 82% Male, mean CD4 355 cells/μL) with HIV and OUD were enrolled. Thirty-nine participants switched treatment, resulting in 29 receiving MET, 27 BUP, and 22 XR-NTX. Dropout rates were higher in BUP (HR=5.08, p=0.0014) and in NTX (HR=4.56, p=0.004) than in MET. Comparisons of dropout through week 48 showed similar results. Rates of viral suppression were similar across all groups (MET 0.14 ± 0.20, BUP 0.14 ± 0.33, XR-NTX 0.10 ± 0.24, N.S.). Time and MOUD had no significant effect on CD4 count. Participants receiving XR-NTX exhibited a greater decrease in sCD14 over 24 weeks compared to BUP (est. 292.67 pg/mL, p= 0.0003) or MET (est. 274.83 pg/mL, p= 0.0004); a similar difference was observed through week 48.

Conclusion: We observed higher retention in treatment for MET than BUP or XR-NTX. While there was no difference in HIV outcomes (viral suppression, CD4 count) between groups, XR-NTX had lower sCD14 levels, suggesting enhanced immune recovery. Results after week 24 should be interpreted with caution due to the elevated dropout rate.

Support: Supported by: NIDA R01DA048728 and R01DA048728S1; Robert I. Jacobs Fund, The Philadelphia Foundation; Herbert M. Kean, MD Family Professorship