



**Uniformed Services University**  
*of the Health Sciences*  
4301 Jones Bridge Road  
Bethesda, MD 20814-4799

Release No. 16-05-12

May 12, 2016

**Contact:** Sarah Marshall, Office of  
External Affairs

**Email:** sarah.marshall@usuhs.edu

---

## **Residual Inflammation, Abnormal Blood Coagulation Place Individuals with HIV at Increased Risk for Non-AIDS Diseases**

**Bethesda, Md.** – With more than 36.9 million people infected globally, HIV continues to be a major public health issue. Those living with the virus are at an increased risk for other non-AIDS diseases, such as cardiovascular disease and cancer, and though it's not entirely clear why, this has been associated with inflammation and abnormal blood clotting. A new study – the largest of its kind – involving researchers from the Uniformed Services University of the Health Sciences (USU), published recently in PLOS ONE, provides direct evidence that altered coagulation caused by the HIV virus, which can be related to inflammation, is not fully halted by HIV treatment and is associated with increased risk of non-AIDS diseases.

Previously, though not definitively proven, researchers have believed individuals with HIV are at an increased risk for non-AIDS diseases because of inflammation, reflected for example by an increase in D-dimer levels. These can be detected through a blood test, and are used to help diagnose abnormal blood clotting or other acute conditions. Researchers have also shown that medications used to suppress and slow the progress of the virus – antiretroviral therapy (ART) – could play a role in lowering D-dimer levels and decreasing patients' risk for non-AIDS diseases. What has been unknown is whether ART treatment returns D-dimer to pre-HIV infection levels or if there is still residual elevation and thus risk.

Through this new study, researchers analyzed 249 HIV positive participants from the U.S. Military HIV Natural History Study, a prospective multicenter observational cohort of more than 5,600 active duty military personnel and beneficiaries living with HIV. They measured blood samples at three different stages of HIV infection: first, before an individual was infected; second, just after HIV infection, prior to receiving ART; finally, at more than six months after ART with successful suppression of the HIV virus. They evaluated the changes in D-dimer levels between each stage, measuring the association between these changes and future non-AIDS events.

At each stage of HIV infection, they found D-dimer levels remained elevated. This, for the first time, demonstrates that successful ART and HIV viral suppression are not adequate to resolve changes caused by HIV and prevent non-AIDS diseases for those living with HIV.

”This study confirms what was believed, that HIV infection causes elevation of D-dimer and ART is not sufficient to fully protect individuals with HIV from development of non-AIDS diseases. While ART is essential in the treatment of HIV and certainly reduces the risk of HIV-associated non-AIDS diseases, it appears that additional types of treatments targeting this residual pathology will be needed and should be studied,” according to study author Dr. Brian Agan, of the Infectious Disease Clinical Research Program, in the Department of Preventive Medicine and Biostatistics at USU.

The researchers suggest further research is needed to help determine other factors associated with an increased risk for non-AIDS diseases, for those with HIV. They also encourage future research to focus on screening and management strategies for the prevention of non-AIDS diseases, even among healthy individuals who achieve HIV viral suppression.

# # #

### **About the Uniformed Services University of the Health Sciences**

The Uniformed Services University of the Health Sciences, founded by an act of Congress in 1972, is the nation’s federal health sciences university and the academic heart of the Military Health System. USU students are primarily active duty uniformed officers in the Army, Navy, Air Force and Public Health Service who receive specialized education in tropical and infectious diseases, TBI and PTSD, disaster response and humanitarian assistance, global health, and acute trauma care. A large percentage of the university’s more than 5,200 physician and 1,000 advanced practice nursing alumni are supporting operations around the world, offering their leadership and expertise. USU also has graduate programs in biomedical sciences and public health committed to excellence in research, and in oral biology. The University's research program covers a wide range of clinical and other topics important to both the military and public health. For more information about USU and its programs, visit [www.usuhs.edu](http://www.usuhs.edu).