

HIV hides itself in the intestines to beat drugs

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HIV can avoid the powerful drugs that sufferers take to destroy it by hiding in their guts, scientists have discovered.

The scientists found that the virus that causes Aids took hold in intestinal tissue of patients receiving antiretroviral therapy (ARV). There it continued to replicate and suppress the immune system even though blood samples showed that the drugs were working.

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The scientists from California University said that results of their three-year study, published in the Journal of Virology, showed HIV treatments needed re-evaluation.

Professor Satya Dandekar, who led the study, said that, while ARV could be quite successful in reducing HIV's presence in the blood, the virus still thrived. "The real battle between the virus and exposed individuals is happening in the gut immediately after viral infection," she said. "We need to be focusing our efforts on improving treatment of gut mucosa, where massive destruction of immune cells is occurring."

Professor Dandekar, head of the university's department of medical microbiology and immunology, said that gut-associated lymphoid tissue accounted for 70 per cent of the body's immune system, and that restoring its function was crucial to destroying the virus.

The study suggests that earlier ARV and the use of anti-inflammatory drugs could achieve this. It also urges gut biopsies on all patients receiving ARV as a way of monitoring their condition.

"We found a substantial delay in the time that it takes to restore the gut mucosal immune system in those with chronic infections," Professor Dandekar said. "In these patients the gut acted as a viral reservoir that keeps us from ridding patients of the virus."

Doctors have long relied on measuring HIV's presence in the blood and T-cell counts. T-cells, also called T-helper cells, organise the immune system's fight against viruses. However, their numbers are reduced when HIV enters the body, leaving carriers vulnerable to infection.

Earlier research by Professor Dandekar and her team supports the claim that patients with high numbers of T-cells in their gut tissue were likely to live longer.

Thomas Prindiville, the study's co-author, said that starting treatment earlier significantly improved the chances of restoring immune function.

"If we are able to restore the gut's immune response, the patient will be more likely to clear the virus," Professor Prindiville said. "You can't treat any infectious disease without the help of the immune system."

The scientists followed ten patients receiving highly active antiretroviral therapy, known as HAART. Three of the patients were treated within six weeks of finding out they were HIV positive.