Global research reaches for consensus on HIV treatment response

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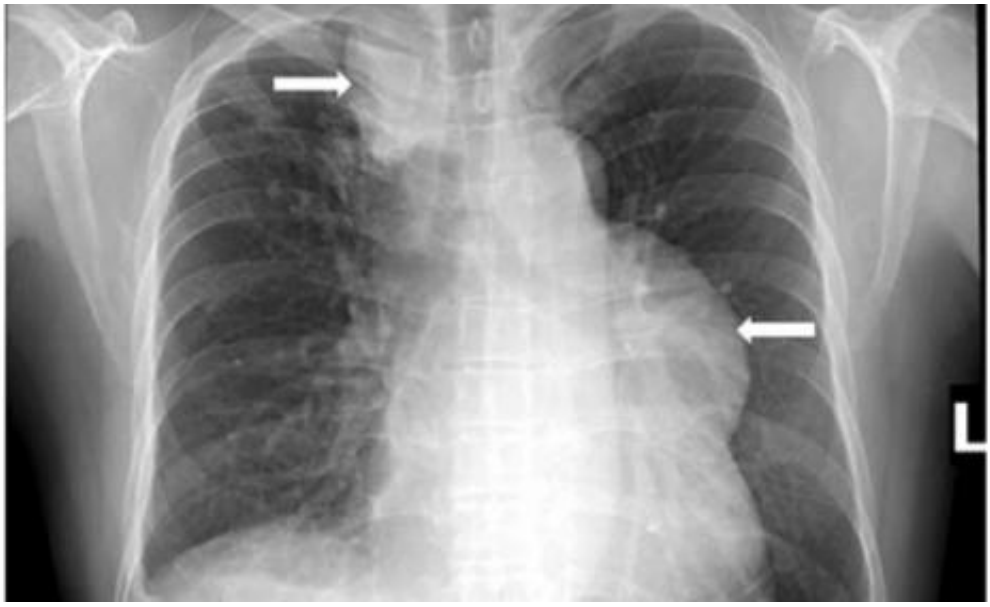

An inflammation in the lungs of a HIV patient who received antiretroviral therapy and developed TB-IRIS. Martyn French/CSIRO Publishing

The body's natural reaction to infection is responsible for potentially fatal side-effects of antiretroviral therapy in patients with HIV, according to research.

Studies conducted over 10 years ago by Perth immunologist Professor Martyn French and his team are now being backed up by large American studies.

The studies are centered on tuberculosis-associated immune reconstitution inflammatory syndrome (TB-IRIS), a common side effect of antiretroviral therapy used to control HIV.

Antiretroviral therapy effectively suppresses HIV but also re-establishes a patient's immune system, thereby triggering an overactive immunity response.

A previously harmless pathogen in the patient's body can make their immune system launch an exaggerated inflammatory response. In serious scenarios this inflammatory response can lead to death.

Prof French's research focused on the role of cytokine interleukin (IL)-6 in TB-IRIS. Cytokines are one of the types of molecules involved in the human immune response. They are responsible for stimulating the movement of other cells towards sites of infection and inflammation.

"Initially, many investigators thought that TB-IRIS, and other types of IRIS, were the result of increasing CD4 T cells after antiretroviral therapy is commenced," says Prof French.

"We published the first study to show that innate immune responses might be more important in TB-IRIS.

"The American paper by Barber shows the importance of IL-6 [interleukin] in an animal model."

Prof French and his team are also investigating the role of other cells involved in IRIS.

"I have been collaborating with investigators in Kuala Lumpur and we have shown that the cytokine IL-18 appears to play a particularly important role," he says.

"These data were presented at the International AIDS Conference in Melbourne [July 2014]."

Professor French says both the Australian and overseas studies have highlighted IRIS is triggered by a high pathogen load and natural immune responses.

"Defining critical inflammatory mediators will lead to more effective therapy for this troublesome complication of antiretroviral therapy."

More information: The complete study is available online: microbiology.publish.csiro.au/ … &file_id=MA14030.pdf

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