

Chasing the Cure

May 1, 2012 By Laura Whitehorn

Crowds flooded the “pathways toward a cure” session at the 19th Conference on Retroviruses and Opportunistic Infections (CROI) in Seattle in March, requiring three overflow rooms. Not surprising. After years with few mentions of the the word cure, today researchers are making some real progress on finding one.

We’re getting closer to a cure, says Sharon Lewin, MD, of Monash University in Melbourne, because “we’re getting information that will inform later studies.” That info includes a better grasp of how a cure will work. Some human trials also reported news.

A primary strategy is eradicating HIV from the body. Sounds obvious—but even when HIV is undetectable in blood, residual pools of virus hide in a resting state in organs and tissue. That HIV must be lured out and forced to replicate so drugs can destroy it.

David Margolis, MD, of the University of North Carolina at Chapel Hill, reported a “proof of concept” study showing that Zolanza (vorinostat), an already-approved cancer drug, does pull some resting virus out of hiding and activate it, theoretically making it vulnerable to HIV meds. Now it must be determined whether doing so will extinguish HIV. Questions on dosing and long-term safety of the drug must also be answered.

Another hopeful sign emerges from studies trying to eliminate HIV from the body by altering genes that control the doorway through which the virus enters cells. Using Sangamo BioSciences’ “viral scissors” mechanism called zinc-finger nuclease, Pablo Tebas, MD, of the University of Pennsylvania, successfully engineered test subjects’ CD4 cells so that they block HIV from entering—which lowered viral loads and raised CD4 counts for short periods while people stopped taking their HIV meds.

With the cure search heating up, Lewin sums up some important things we now know: “Multiple strategies—a combo approach—will be needed; early tests may look negative while we figure out dosing; and any strategy needs to be cheap and widely available.”