

More on the Berlin patient, stem cells, and a cure for HIV

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The response to the story about the Berlin patient who was reported cured of HIV has been incredible, but in this case it's also a little troubling. What I see in comments on news stories or in tweets is that we have an uphill battle in terms of educating people about stem cells.

The stem cells used to eliminate this man's HIV infection were from the bone marrow. Essentially, what he got was just a really great bone marrow transplant, because the transplanted cells were resistant to HIV. The bone marrow houses the blood-forming stem cells that create the entire blood system. Those blood-forming stem cells were the first stem cells to be identified, back in 1998 by Stanford's Irv Weissman.

CIRM's two disease teams are working on even more sophisticated -- and safer -- bone marrow transplants that could bring this same cure to thousands of people who need it. (Summaries of those teams are available [here](#) and [here](#).)

What concerns me is that many of the comments on news stories or Tweets are tying this HIV therapy to embryonic stem cells or even abortion. Just so we're clear here, an aborted fetus has no embryonic stem cells. None. Human embryonic stem cells come from IVF embryos left over after a couple completes their family. (Paul Knoepfler of UC Davis has a good description of how those human embryonic stem cell lines are created.) These embryonic stem cells are amazing - they can form any tissue in the body, which can become cures or unlock the mysteries of how diseases form.

In the case on the Berlin patient, it was adult, blood-forming stem cells that were the basis of the cure. For other diseases, the cure may come from embryonic or reprogrammed iPS cells. At this point, we don't know which cell type will cure which disease. All we know is that we need cures, and like the Chilean miners who dug three rescue holes to have one succeed, we're working all angles in order to be successful in our quest for cures.

A.A.

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