Harvard Calls for Retraction of Dozens of Studies by Noted Cardiac Researcher

Some 31 studies by Dr. Piero Anversa contain fabricated or falsified data, officials concluded. Dr. Anversa popularized the idea of stem cell treatment for damaged hearts.

By Gina Kolata

Oct. 15, 2018

A prominent heart researcher formerly at Harvard Medical School and Brigham and Women’s Hospital in Boston fabricated or falsified data in 31 published studies that should be retracted, officials at the institutions have concluded.

The scientist, Dr. Piero Anversa produced research suggesting that damaged heart muscle could be regenerated with stem cells, a type of cell that can transform itself into a variety of other cells.

Although other laboratories could not reproduce his findings, the work led to the formation of start-up companies to develop new treatments for heart attacks and stroke, and inspired a clinical trial funded by the National Institutes of Health.

“A couple of papers may be alarming, but 31 additional papers in question is almost unheard-of,” said Benoit Bruneau, associate director of cardiovascular research at the Gladstone Institutes in San Francisco. “It is a lab’s almost entire body of work, and therefore almost an entire field of research, put into question.”

Harvard Medical School and Brigham and Women’s Hospital began their review of Dr. Anversa’s publications in January 2013. In April 2017, Brigham and Women’s Hospital agreed to pay $10 million to the federal government to settle accusations that Dr. Anversa submitted fraudulent data to get research funding.

Officials at Harvard said that 31 studies by Dr. Anversa should be retracted.
Officials at Harvard declined to comment on why it took so long to take action on Dr. Anversa’s published work. Dr. Anversa could not be reached for comment.

The cardiac researcher rocketed to fame in 2001 with a flashy paper claiming that, contrary to scientific consensus, heart muscle could be regenerated. If true, the research would have had enormous significance for patients worldwide.

His method was to take stem cells from bone marrow and inject them into the heart. As if by magic, he reported, the stem cells turned into heart cells and repaired damage. The first studies were conducted in mice, but the finding electrified researchers.

[Like the Science Times page on Facebook. | Sign up for the Science Times newsletter.]

Companies were formed, including one headed by Dr. Anversa, based on the claim that by injecting stem cells they could heal hearts that were damaged by heart attacks.

Yet researchers failed to duplicate the work. In one paper, Dr. Irving Weissman, co-director of Stanford University’s Institute of Stem Cell Biology and Regenerative Medicine, and his colleagues concluded that bone marrow cells injected in the heart remain bone marrow cells.
Another paper, by Dr. Charles Murry of the University of Washington in Seattle and his colleagues, came to the same conclusion and said the failures to replicate Dr. Anversa’s work “raise a cautionary note.”

But Dr. Anversa held firm. In effect, his response was “you guys don’t know how to do it,” said Dr. Bruneau.

“Many labs said, ‘O.K., game on. We will keep trying to do it,’” he added. But the list of failures grew.

Dr. Anversa claimed to have discovered that bone marrow cells are not needed to repair heart muscle. The heart has its own stem cells, he reported, which can be removed, multiplied in a petri dish, and injected back into the heart to replace and repair damaged cells.

No one else could get those experiments to work, either, said Jeffery D. Molkentin, a professor at the Howard Hughes Medical Institute and Cincinnati Children’s Heart Institute.

Dr. Molkentin found a way to label and trace the lineage of stem cells as they morphed into other cells. That let him investigate whether any heart cells were derived from these stem cells.

The answer was no, and in 2014 he published a paper that should have put to rest all claims that stem cells could turn into mature working heart cells and repopulate the heart.

A study published in the journal Circulation by Dr. Anversa was retracted in 2014 after co-authors wrote to the journal saying the data in the paper were not data they had generated. Dr. Anversa left Harvard and Brigham and Women’s in 2015.

Despite the troubling questions that had been raised about the stem cell work, the National Heart, Lung and Blood Institute began a clinical trial of injected stem cells for patients with heart failure.

The study is still enrolling patients. And there are still companies selling stem cell therapy for damaged hearts.

In the past few years, however, skeptical researchers moved on to other prospects for heart treatment. “The field has backed off a lot,” Dr. Molkentin said.

Some scientists wondered how a questionable line of research persisted for so long. Maybe, Dr. Molkentin said, experts were just too timid to take a stand.
But what about those companies selling stem cell treatments for the heart?

“People wanted to believe,” he said.

[Read about how hoaxers slipped breastaurants and dog-park sex into journals.]

**Earlier reporting by Gina Kolata on heart health**

**Tiny Device Is a ‘Huge Advance’ for Treatment of Severe Heart Failure**  Sept. 23, 2018

**For Patients With Heart Failure, Little Guidance as Death Nears**  Nov. 6, 2017

**A Sea Change in Treating Heart Attacks**  June 19, 2015

**A Possibly Lifesaving Guide to Heart Attacks**  June 22, 2015

Gina Kolata writes about science and medicine. She has twice been a Pulitzer Prize finalist and is the author of six books, including “Mercies in Disguise: A Story of Hope, a Family’s Genetic Destiny, and The Science That Saved Them.” @ginakolata  •  Facebook

A version of this article appears in print on Oct. 16, 2018, on Page A13 of the New York edition with the headline: Cardiologist Falsified Data, Harvard Says