Change in Federal Stem Cell Funding Policy Spurs Interest in Field

By Joel B. Finkelstein

The recent action by the Obama administration to overturn restrictions on federal funding for embryonic stem cell research is expected to breathe new life into the field.

The change in policy, which was made official on March 9, lifted the ban on the use of federal funds for any research involving human embryonic stem cell lines established after August 9, 2001, when then-President George W. Bush announced an executive order creating the restrictions. A 1996 law still bans the use of federal funds in the destruction of a human embryo, a necessary step in creating such cell lines, but those created with private or state funding are now eligible to be used in federally funded projects.

“At this moment, the full promise of stem cell research remains unknown, and it should not be overstated,” said President Barack Obama, announcing his executive order overturning Bush’s. “But scientists believe these tiny cells may have the potential to help us understand, and possibly cure, some of our most devastating diseases and conditions … Parkinson’s, cancer, heart disease, and others that affect millions of Americans and the people who love them.”

The mention of cancer cheered many oncologists in particular. But more broadly, the change in policy is an enormous morale booster for many investigators, according to stakeholders across the nation, who say there had been a growing number of problems with those lines, which were created using outdated techniques. Many advances have occurred since those lines were created, not only in stem cell line derivation but also in manipulation.

One such development is cell lines that contain reporter constructs, such as a fluorescent protein or some other tracking mechanism that allows scientists to better follow the development of specific types of cells. Another cell lines that meet good manufacturing practices, ensuring that they are free of contaminants or infections, and provide a necessary vehicle for transitioning potential treatments into clinical trials.

More Funds?

Of course, none of this can happen without money, said Kaufman. “You can have all the [embryonic stem cell lines] in the world available to use, but if the funds aren’t there, then it doesn’t matter,” he said.

Kaufman said he was encouraged that Obama’s speech mentioned cancer. “People, when they talk about disease to be treated by stem cells, it’s usually Parkinson’s and diabetes and spinal cord injury and other things where you need replacement cells. Having cancer on that list is a definite plus,” he said.

There are other signs that more funds may be forthcoming. The stimulus package that was signed into law in mid-February refers specifically to stem cells as one of the broad challenge areas to be addressed. And in January, after 4 years of review, the U.S. Food and Drug Administration approved the first-ever phase I clinical trial of a treatment derived from human embryonic stem cells.
For patients with spinal cord injuries, the treatment is designed to rebuild the cells that protect the nerves of the spinal cord.

The change in policy is also likely to stimulate renewed interest among private investors and the pharmaceutical industry, according to Trounson. “Big companies are very sensitive to political issues,” he said.

Kaufman said that changes in public attitudes could also help. “It’s already been accepted by the vast majority of people in the country. But with the lifting of this ban, you lose any stigma that was attached to this,” he said.

Despite that attitude adjustment, research involving human embryonic stem cells seems likely to continue to raise controversy among religious groups that oppose abortion, in vitro fertilization, or both. Several antiabortion members of Congress held briefings after Obama’s announcement to denounce the move. On the other hand, legislation that would codify Obama’s executive order has again been introduced in Congress. Passage of such legislation, which is identical to a measure passed in 2007 and vetoed by Bush, would make it far more difficult for a future president to reinstate the restrictions.

There has been no similar move to overturn the Dickey–Wicker Amendment, the 1996 law that prohibits the use of federal funds in the creation or destruction of a human embryo, thus making it effectively impossible to derive new stem cell lines with government support. Until that happens, the generation of new cell lines will remain the realm of state and privately funded scientists.

But some experts remain optimistic that eventually the field will be removed entirely from the realm of politics. “My hope is that by the time we have another presidential campaign, we will have had a really wonderful breakthrough and nobody [will want] to hear about stopping this research,” Solomon said. “It’s the results that are going to get us out of the political quagmire.”