

Embryonic Stem Cell Research - Wasting Maryland's Resources

The first principle in public funding of scientific research is to fund ethical proposals. The second is to fund the most promising proposals. Two years ago, Maryland abandoned both.

The state has a \$400 million budget shortfall this year and a \$1 billion budget gap next year, yet it continues to direct tens of millions of taxpayer dollars to the most speculative, least successful, most problematic type of stem cell research - embryonic stem cell research (ESCR), which kills human embryos.

Stem cells (SCs) are sought for their regenerative properties. Several sources of stem cells exist, one of which is dissected human embryos. Others include umbilical cord blood, placentas, and our own bodies, which are rich in adult stem cells (ASCs). Research using these non-embryonic stem cells is free of the moral issues that plague ESCR.

In addition, a distinction exists in the therapeutic value of the cells. So far, non-embryonic SCs have been used to treat 72 conditions in humans, including spinal cord injury, sickle cell disease, heart disease, blindness, and numerous forms of cancer. Embryonic stem cells (ESCs) have helped no one - that is, they have yet to produce a single therapy or cure. Yet those who champion research using ESCs continue to claim that ESCs are "better."

Better? Let's review a few facts.

ESCs frequently form tumors; adult SCs do not. ESCs are rejected by the patient's immune system; adult SCs are compatible because they're obtained from the patient's body. ESCs are difficult to obtain and coax into desired tissue; non-embryonic SCs are easy to obtain and manipulate. ESCs have treated no patients; non-embryonic SCs have treated thousands of people. ESCs are "better?"

The last bastion of claimed superiority of ESCs is that ESCs are pluripotent, while most non-embryonic SCs are not. "Pluripotent" cells can morph into every type of

cell in the body. This debate was radically altered last November when two scientific studies demonstrated cells from human skin can be reprogrammed into pluripotent stem cells. These new stem cells are called induced pluripotent stem cells (iPS cells).

Numerous scientific papers were published in the last year demonstrating the therapeutic potential of iPS cells. Now that ethically-obtained ASCs are easily reprogrammed to become pluripotent cells, the dubious claim of ESCs being “better” must be dismissed.

While one might think that now Maryland will abandon funding of ESCR and invest scarce state dollars into ethical and successful research, Annapolis is often referred to as “the logic-free zone.”

Prominent scientists such as Ian Wilmut, who cloned Dolly the sheep, and James Thompson, who founded embryonic stem cell research, are focusing their efforts on the therapeutic potential of iPS cells. Japan, home of Dr. Shinya Yamanaka, author of one of the breakthrough papers describing iPS cells, is considering establishing an iPS cell research center and dramatically increasing funding for the research. Yet, Maryland remains behind the times, stubbornly funding ESCR.

In Maryland’s first year of funding SC research, of the \$9.2 million awarded to large-scale proposals, \$7.4 million went to projects involving ESCs. The second year, 45 percent of the large-scale grants went to projects involving ESCs. The current state budget includes \$18 million for stem cell research.

The creation of iPS cells is a breakthrough everyone can embrace. The scientific, therapeutic, and moral superiority of this research demands that the state permanently abandon wasteful spending on ESCR.

Maryland taxpayers – and, more importantly, patients waiting for cures – deserve that scarce research dollars be devoted exclusively to the research that offers the greatest hope – research using iPS and other types of non-embryonic stem cells.

This article is part of an ongoing series from the Archdiocesan Respect Life Committee, of which Dr. Paltell is the chair.