Stem Cell Wars

December 17, 2005

The political war over stem cell research is heating up as evidenced by two recent events in the media. For the last few weeks, Senate Democrats have blocked action on a bill that would allow the use of umbilical cord blood in stem cell research. Although the bill passed the House by a remarkable vote of 431-1, the democratic leadership in the Senate would not allow a vote on the measure. The bill was even endorsed by the Congressional Black Caucus due to the positive appeal from former basketball star Julius (Dr. J.) Erving.

Also in the news was the decision by University of Pittsburgh's Gerald Schatten to quit the human cloning project of South Korean scientist Dr. Hwang Woo Suk. Dr. Schatten cited ethical concerns about possible coercion in obtaining eggs from female project staffers. Dr. Schatten also demanded that his name be removed from an article he co-wrote with Dr. Hwang for the journal *Science* because he believes it used fraudulent photographs in the article.

Background

Stem cells are the basic cells in our body. They get their name from their similarity to the stem of a plant which gives rise to branches, bark, and every other part of a plant. Embryonic stem cells are the cells from which all 210 different kinds of tissue in the human body originate. As an embryo develops into a blastocyst, a few layers of cells surround a mass of stem cells. If these stem cells are removed from the blastocyst, they cannot develop as an embryo but can be cultured and grown into these different tissues.

Stem cells are undifferentiated and self-replicating cells that have the potential to become the other differentiated

cells in our body. And that is why there is so much scientific and political attention being paid to stem cells.

The potential for stem cell research is enormous and intoxicating. Nearly 100 million Americans have serious diseases that eventually may be treated or even cured by stem cell research. Many diseases (like Parkinson's, heart disease, diabetes) result from the death or dysfunction of a single cell type. Scientists hope that the introduction of healthy cells of this type will restore lost or compromised function.

Moral Perspective

The moral problem with the research is that to obtain human embryonic stem cells, the embryo is destroyed. Embryos needed for human embryonic stem cell research can be obtained from three sources: (1) in-vitro fertilization used to produce embryos, (2) frozen embryos which are spare embryos left over from in-vitro fertilization, or (3) human cloning of embryos.

In addition to the moral problem is the scientific reality that embryonic stem cell research has not been successful. Although human embryonic stem cells have the potential to become any type of human cell, no one has yet mastered the ability to direct these embryonic cells in a way that can provide possible therapy for humans afflicted with various diseases.

Numerous stories are surfacing of the problems with human embryonic stem cells. One example took place in China where scientists implanted human embryonic stem cells into a patient suffering from Parkinson's only to have them transform into a powerful tumor that eventually killed him.

Often the media has not been telling the truth about embryonic stem cell research. So why hasn't the media accurately covered this issue? "To start with, people need a fairy tale," said Ronald D.G. McKay, a stem cell researcher at the National Institute of Neurological Disorders and Stroke. "Maybe that's

unfair, but they need a story line that’s relatively simple to understand.”

What has been lost in all of this discussion is the humanity of the unborn. Proponents of embryonic stem cell research argue that an embryo or fetus is a “potential” human life. Yet at every stage in human development (embryo, fetus, child, adult), we retain our identity as human beings. We are humans from the moment of conception. We do not have the right to dismember a human embryo because it’s unwanted or located in a test tube in a fertility clinic.

Also lost in this discussion is the success of using stem cells from sources other than embryos. Successful clinical trials have shown that adult stem cells as well as umbilical cord blood have been very effective. These sources may provide cures for such diseases as multiple sclerosis, rheumatoid arthritis, systematic lupus, etc. Some studies seem to indicate that adult stem cells create “fewer biological problems” than embryonic ones.

No moral concerns surround the use of human adult stem cells since they can be obtained from the individual requiring therapy. And using blood from umbilical cords of newborns does not raise any significant concerns because the newborn is not harmed in any way.

In the last few years, stem cells have also been found in tissues previously thought to be devoid of them (e.g., neural tissue, nasal passages). And human adult stem cells are also more malleable than previously thought. For example, bone marrow stem cells can produce skeletal muscle, neural, cardiac muscle, and liver cells. Bone marrow cells can even migrate to these tissues via the circulatory system in response to tissue damage and begin producing cells of the appropriate tissue type.

Human adult stem cell research is already effective and raises

none of the moral questions of human embryonic stem cell research. Even biotech industry proponents of embryonic stem cell research believe that we may be twenty years away from developing commercially available treatments using embryonic stem cells.

All of this, however, seems lost on some in Congress who continue to push for additional funding of embryonic stem cell research. When democratic leaders in the Senate hold up a cord blood bill that will help people just to get a vote on an embryonic stem cell bill, they clearly have the wrong priorities. Adult stem cell research is already effective. Embryonic stem cell research is not.

BIN_ID:{260B525E-DBCC-48E2-B363-4B8FFBF9EBFC}