Stem cell research-reaction paper

Science, Anatomy

Stem Cell Research- Reaction Paper Reaction Paper: Stem Cell Research Heather A. Lail Liberty University Stem cell research has bought about heated debate since the time it was reviled. Many different debates have been raised to justify and unjustified the use of stem cells for research throughout the years. The two most enduring debates that have stood the test of time have been the legal and ethical issues. The has been documented in countless research studies the advantages of the use of stem cells for research regarding the two issues stated above.

There are also countless articles documenting the disadvantages regarding the stated issues. I will discuss what a stem cell is, the different types of stem cells, and the advantages and disadvantages of both types. I will also discuss the two majorly debated issues, legal and ethical, as states above. A stem cell is fundamentally a blank cell that is capable of becoming another more differentiated cell type in the body and can be used to replace or even heal damaged tissues and cells in the body. Embryonic stem cells come from living, human embryos and can be harvested from two sources, embryos and fetuses.

Embryonic stem cells are obtained by harvesting living embryos which are generally 5-7 days old. The removal of embryonic stem cells invariably results in the destruction of the embryo. Fetuses are another type of stem cell called an embryonic germ cell can be obtained from either miscarriages or aborted fetuses. Advantages of embryonic stem cells are that they appear to have the potential to make any cell, one embryonic cell line can potentially provide an endless supply of cells with define characteristics, and they are readily available due to in vitro fertilization clinics.

Some disadvantages of embryonic stem cells is that they are difficult to differentiate uniformly and homogeneously into target tissue, embryonic stem cells from random donors are likely to be rejected by recipients, they are capable of forming or promoting tumor formation, and it is the destruction of a human life. Adult stem cells exist in humans and are used to maintain and repair the tissue in which they are found. Adult stem cells come from umbilical cords, placentas, amniotic fluid, existing adult issues and cadavers.

The advantages of adult stem cells include adult stem cells from bone marrow and from umbilical cord appear to be as flexible as embryonic stem cells, adult stem cells are already specialized to some extent, recipients receiving the cells are receiving their own cells which significantly reduces rejection of tissue, they are relatively easy to harvest, they do not tend to form tumors, and there is no harm to the donor. (National Institute ofHealth) The most prevalent legal concerns in terms of stem cell research are laws related to federal funding of the research.

In August, 2001 President Bush announced that federal funds would be available to support limited human embryonic stem cell research. The fact White House fact sheet setting forth Bush’s policy states “ federal funding will only be used for research on existing stem cell lines that were derived with the informed consent of the donors, from excess embryos created solely for reproductive purposes, and without any financial inducements to the donors”(Shimabukuro).

With these limitations no federal funding is to be used for the derivation of stem cell lines derived from newly destroyed embryos, the creation of any

human embryos for research purposes, or cloning of human embryos for any purposes. The Stem Cell Therapeutic and Research Act of 2005 “ provides for the collection and maintenance of human cord blood stem cells for the treatment of patients and for research” (Shimabukuro).

The Fetus Farming Prohibition Act of 2006 “ amends the Public Health Service Act to make it unlawful for any person or entity involved or engages in interstate commerce to either solicit or knowingly acquire, receive, or accept a donation of human fetal tissues knowing that a pregnancy was deliberately initiated to provide such tissue, or knowingly acquire, receive, or accept tissue or cells obtained from a human embryo or fetus was gestated in the uterus of a nonhuman animal” (Shimabukuro).

The above federal laws have been put in place in an attempt to alleviate some of the legal issues involved in the use of stem cells for the use of research purposes. The ethical issues debated by the masses regarding stem cell research include evaluating the benefits and harms of embryonic research and the value of the embryo. The benefits of stem cell research are the advances made in medicine in the aspects of somatic gene therapy for genetic disorders and the generation of replacement organs and tissues for transplant.

The benefits of stem cell research are vast in the potential of curing certain ailments, disorders, and disease afflicting people. On the other hand of the ethical issue is the value of the embryo. Heated debate on this issue alone has been the mainstream since the first stem cell study was preformed. At one end of the spectrum is the belief that the embryo from the moment of

conception is a person in its own right with the same moral status as an adult.

On the other end of the spectrum there is an alternative stance that the embryo acquires full personhood and the moral rights by gradual stages during the process of development between conception and birth. (Rickard; Corrigan, Liddell, McMillan, Stewart, and Wallace) I personal hold to the belief that using embryos created and destroyed for the sake of research is wrong in every aspect due to my personal Christian beliefs. Jeremiah 1: 4-5, " The word of the LORD came to me, saying, Before I formed you in the womb I knew you, before you were born I set you apart; I appointed you as a prophet to the nations" (NIV).

Psalm 127: 3, " Sons are a heritage from the LORD, children a reward from him" (NIV). I also feel that even though there are potential benefits of stem cell research, the benefits are just that potential. I personal do not feel the means outweigh the risk.