The Role of Ethics in an Era of Stem Cell Research

Example

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Introduction

Stem Cell Research has been in the public eye since the first isolated sample in 1999. This discovery gave regenerative tissue researchers new hope, but also gave politicians and citizens everywhere a new platform to discuss. These discussions seem to focus less on the immense and innumerable potentials of Human Embryonic Stem Cell Research (later referenced as hESR), but rather the argument of whether the pursuit is worth the cost. Most opponents argue that hESR in immoral, unethical, and should not be pursued on the grounds of embryonic destruction. The purpose of this paper is to offer a more complete understanding of hESR in the hopes of creating more citizens in support of its pursuance. This will be done by explaining what hESR is, why many oppose it, the benefits of it, an examination of embryonic rights, and its current national and global practices.

What is Human Embryonic Stem Cell Research?

Human Embryonic Stem Cell Research is the study of totipotent cells found in early forms of human embryos. (Balint, 2002). To better understand where the controversy over this research begins, it is important to also understand the sources of these cells. Fertilization of a zygote occurs when a spermatozoon enters an ovum and the DNA inside both combine to form 46 chromosomes. If conditions are favorable, the zygote divides to eventually form a blastocyst consisting of 120 to 150 cells. Some of these are totipotent cells- cells that are able to develop into any human tissue. These are the golden eggs required for stem cell research, and are also the main form of controversy regarding it. This leads us to "The Problem", as outlined by Katrien Devolder: "Either one supports embryonic stem cell research and accepts the resulting embryo destruction, or one opposes embryonic stem cell research and accepts that the potential benefits will be foregone" (Moen, 2016).

Why We Say No

The main issue regarding hESR is the assessment of embryo rights. It is a fair assessment to say that pro-life citizens generally hold that human life, from the moment of conception, has moral and human rights. Under this view, the reasons for opposition are apparent: destroying embryos is equivalent to sacrificing human life. However, this is not the only dilemma found within hESR. Another issue is revealed when examining the payment for such materials, as "some claim that women should be paid a fair wage for their reproductive labour or tissues, while others argue against the further commodification of reproductive labour or tissues and worry about voluntariness among potential egg providers" (Baylis, 2007). This issue raises dozens of potential remedies, such as paying only for the medical services required for retrieving the eggs, paying for missed work due to the procedure, or paying higher amounts to women undergoing in vitro rather than those terminating pregnancies. All of these questions are swirling around research which, regardless of moral stances, holds the most promise for life changing discovery and medicine.

The Benefits of hESR

Setting aside the controversy over embryonic rights, it is vital to understand the potential benefits of stem cell research. Benefits and promises of stem cell research are enormous, and hold possible cures for diseases such as cancer, type 1 diabetes, Parkinson's and even cardiovascular diseases (Murnaghan, 2017). In addition, stem cells can be used in lieu of donated organs for those awaiting transplants. Such patients are on wait lists much higher than the number of available organs, and many die before receiving transplants. Also, these cells have the potential to cure genetic defects or spinal injuries by restoring function or through introduction to damaged tissue. Stem cell research provides a window into human development, allowing scientists to study the differentiation process of cells from zygote to blastocyst, and will generate a better understanding of the stages in which most diseases form.

Rights of The Embryo

Although the promises of hESR are incredible, many citizens oppose its pursuance by claiming that the necessary destruction of embryos is equivalent to the destruction of human life. Under this logic, many people believe that embryos deserve the same moral rights and status as adult human beings. This argument, the most common among opponents of hESR, is surprisingly the most flawed. To give embryos the same rights as humans, it follows that embryos and humans are equal. To prove this, one must be able to trace the life of a single adult human to a single early embryo. This tracking is impossible, however, as no one human ever existed as the blastocyst from which stem cells are retrieved. The stage of embryonic development in which such cells are retrieved is before fetal development has even begun. Under this understanding, it is impossible to trace one human existence back to a single blastocyst. For example, this blastocyst, or mass of cells, still maintains the potential to divide into two fetuses; creating twins. Phillip Montague also argues this point, and concludes that

Since there is no reason to believe that any adult human being once existed as an embryo from which stem cells could have been obtained, there is no reason to believe that these embryos are human beings with the same moral status as adult humans. (Montague, 2011).

Since the twins in the earlier example can only be individually traced back to their fetal stages, at four weeks old, it is impossible to say that embryos are equivalent to human beings, and therefore impossible to grant them the same moral rights as human beings. If these facts are true, then the main argument against hESR has been eliminated. Although this is not the only ethical debate surrounding the research, it is now possible to discuss its practice in the United States.

Practicing Human Stem Cell Research

America has been forging the frontier of science and medicine for decades. We enjoy being a world leader in many things, and constantly strive towards a brilliant and peaceful future. This being said, it seems in stark contrast that we are refusing federal funds to such promising research. In fact, the picture grows stranger still when examining the laws we have put into place regarding the field; such as protecting this research within in the constitution, while simultaneously refusing to support it financially on moral and ethical grounds. The problem with this current paradigm is examined by Jody Schechter in her comparison of U.S. and U.K. policies. She explains that,

The lack of federal funding for a particular project does constrain private investors in practice; institutions that receive federal funding are often provided incentives to abide by federal restrictions for any research conducted within them, not just those activities directly funded with public money. At the very least, an institution receiving both federal and private funding must establish a clear separation—a daunting task. If a scientist researching with private funds so much as accidentally places an embryo in the wrong refrigerator, one maintained using federal funds, the whole facility could be threatened with a total loss of federal funding. Third, federal sponsorship of research encourages sharing of information among scientists, which greatly accelerates scientific progress. Conversely, when research is done privately, dissemination of knowledge is often delayed due to intellectual property issues. (Schechter, 2010)

So if America, a world leader in science, isn't gripping the problem correctly- who is? This is where an examination of United Kingdom hESR policies comes into play. Although it is illogical to assume that America could simply adapt the following practices, they should be considered as the possible ground work for the future of hESR in America. Firstly, hESR is entirely funded by the government. Secondly, this funding was reached by the conclusion that the public, as well as the government, will remain inherently divided on the issue of embryo rights. Recognizing this, they choose to focus on the regulation of such research rather than its moral controversy. Such regulations include specific licensing, as well as time frames of embryo development in which the research can occur. Thirdly, they encourage unused In-Vitro embryos to be donated with medical fee waivers. These are only a few of progressive laws and regulations practiced in the U.K. which can act as an example for the U.S. to follow.

Conclusion

Although an ethical debate may be raged for decades, the evaluation of U.K. policies lends hope to the future of hESR in the U.S. Also, a scientific outlook on the problem of embryo rights may be solved with the previous examination of the blastocyst in terms of human life cycle. Currently, nearly 60% of Americans support federal funding for this promising field, though we have still yet to achieve this (Stem Cell Research, 2015). It is vital that we all become educated on our position towards hESR so that we can influence its future practice through voting and outreach.

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