



Embryonic Stem Cells in Stroke Treatment Health Laws and Shariah Perspective

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Stroke is a disease that is much feared by the public. Stroke occupies the second place as a cause of death and the third as a cause of disability. One alternative treatment method is the use of stem cells. The objective of this study is to determine the use of stem cells in the treatment of stroke in terms of the perspective of Article 64 of Act No. 36 of 2009 on Health as well as knowing how the use of stem cells in the treatment of stroke is viewed from the perspective of Shariah. The research method used is a normative juridical approach by studying the regulations on the implementation of stem cells. The results showed that the use of stem cells taken from human embryos for any therapeutic treatments are not allowed except when the therapy is the only solution to save human lives. According to Shariah embryonic stem cells can be used with the requisite attention to ethical and moral values.

Key words: *Embryonic Stem Cells, Health Laws, Shariah.*

Introduction

Stroke is a disease that is much feared by the public. Stroke occupies the second place as a cause of death and the third as a cause of disability (Wiguna, 2014). Stroke cases in Indonesia are the 3rd disease as a cause of death in adults. It is estimated that approximately 80% to 90% of post-stroke patients experience emotional problems, like excessive reactions such as feeling sad, irritable, unhappy, moody despair and depression. However if the family and the environment for post-stroke patients is very supportive and caring, it can make life better.



From that number of patients about 2.5% of people died and the rest are left with mild or severe disability (Hartanto, 2009). Various methods of treatment have been carried out both medically or other alternative methods, but the success rate is still considered low. Until now cases of stroke cannot be cured properly despite many types of treatment used. One alternative treatment that can restore stroke patients satisfactorily, as well as reduce the morbidity and mortality of stroke cases worldwide, especially in Indonesia is stem cell therapy.

Stem cells are undifferentiated cells and have a very high potential to develop into many different cell types in the body that serves as a repair system for the body to replace cells that have been damaged for the survival of the organism. Stem cells consist of a zygote, embryonic stem cells, fetal, umbilical cord blood stem cells and adult stem cells. Transplantation of stem cells in neurological disorders, including stroke, is to replace or improve biological function of damaged neural cells in order to maintain or restore brain function. New neuronal cells can be generated from stem cell transplantation. In addition, the adult brain is triggered to create new neural cells in response to damage that will improve the quality of stroke patient recovery (Tangkuman, 2013; Devadason, Govindaraju, and Mubarik, 2018).

Most stem cell research is done by using stem cells derived from embryos and is loaded with ethical and legal risks. Research on the success of stem cell therapy in Indonesia has not been officially reported, although some teaching hospitals have carried out stem cell therapy with standard operating procedures that vary according to the capabilities of the Hospital. Stem cell research in Indonesia targets to produce stem cells for stroke recovery in the next 3-5 years. Currently this treatment is being developed in animal studies for stroke.

In Indonesia the treatment is still limited at the research stage, currently only involving 11 hospitals in Indonesia are involved however this network has become the center of the development of medical services and educational research on stem cells. These 11 hospitals are Dr. Cipto Mangunkusumo Hospital and Dr. Soetomo as a founder. Next followed by Dr. M. Djamil Hospital, Padang, West Sumatera, Jantung Harapan Kita Hospital, Jakarta, Fatmawati Hospital, Cancer Dharmais Hospital, Persahabatan Hospital, Dr. Hasan Sadikin Hospital, Bandung, Dr. Sardjito Hospital, Yogyakarta, Dr. Karyadi Hospital, Semarang, and Sanglah Hospital, Bali.

Research on stem cell technology created controversy because many researchers wanted to develop technology embrionic human stem cells that could bring many benefits, yet there remained ethical dilemmas such that in the case of genetically modified organisms, once they are created they can not be withdrawn (Widayanti and Ika N. Krishnayanti, 2003). Experts have begun to examine the possibility of using stem cells to treat diseases or abnormalities that may no longer to be treated with medication or operative action (Setiawan and Benjamin, 2006). Stem cells have great potential in medical science to be used as cell therapy for various degenerative diseases (Enger and Eldon, 2007).

The use of stem cell technology can be a treatment by replacing damaged cells with stem cells that have the potential to grow as healthy new cells. This method opens a new way to save patients with incurable (Cermin Dunia Kedokteran, 2013) diseases. Since the discovery that embryonic and adult stem cells can multiply indefinitely and can occur transdifferentiation, it is now clear that damage to body tissue can be repaired by adult stem cells circulating in the blood and stem cells contained in each organ (Emi and Mimin, 2004).

The opinions of religious leaders from Islam, Catholic, Christian, Hindu and Buddhist is currently that the use of stem cells taken from human embryos for any therapeutic treatment are not allowed, except when therapy is the only solution to save human lives. (Anwar, 2010; Devadason, Govindaraju, and Mubarik, 2016). It is known that the embryo is formed after conception, so removing it is the same as having an abortion. Exceptions are made to cells taken from the remaining embryos produced by IVF made from sperm and egg cells of a married couple (Wibisono, 2008).

Investigation using stem cells is the latest method in the medical and biological fields which is being conducted to find the best method of treating various diseases that are difficult to find a cure such as leukemia, Alzheimer's, diabetes, and Parkinson's. However, due to the use of stem cells obtained from a portion of the human body as basic materials, then this method raises pros and cons, especially in terms of religion and law.

Islam as a religion that is based on high moral and ethical values cannot escape this difference of views on the topic. Based on the method of extraction it is clear that stem cells are very contrary to law and religion because to take stem cells, damage and death to the embryonic stem cells occurs. Religious ethical assessment of the research using pluripotent cells derived from human embryos in Islam can inferentially be deduced from the Shari'ah rules relating to the viability of the fetus and the sanctity of the embryo in the classic and modern legal decisions (Zuhroni, Nur Riani, and Nazarudin. 2003). The life of a fetus in the womb, according to the Qur'an, goes through several stages, which are described in detail and precisely. In Al-Qur'an chapter 23 Al Mu'minin verse no. 12-14, Allah SWT says::

وَلَقَدْ خَلَقْنَا الْإِنْسَانَ مِنْ سُائِلَةٍ مِنْ طِينٍ ﴿١٢﴾
ثُمَّ جَعَلْنَاهُ نُطْفَةً فِي قَرَارٍ مَكِينٍ ﴿١٣﴾
ثُمَّ خَلَقْنَا النُّطْفَةَ عَلَقَةً فَخَلَقْنَا الْعَلَقَةَ مُضْغَةً فَخَلَقْنَا
الْمُضْغَةَ عِظْمًا فَكَسَوْنَا الْعِظْمَ لَحْمًا ثُمَّ أَنْشَأْنَاهُ خَلْقًا آخَرَ
فَتَبَارَكَ اللَّهُ أَحْسَنُ الْخَالِقِينَ ﴿١٤﴾

Translation: *Certainly We created (khalaqna) man from an extract of clay. Then We made him a drop of [seminal] fluid [lodged] in a secure abode. Then We created the drop of fluid as a clinging mass. Then We created the clinging mass as a fleshy tissue. Then We created the fleshy tissue as bones. Then We clothed the bones with flesh. Then We produced him as [yet] another creature. So blessed is Allah, the best of creators (khaliqin). (Q. 23: 12-14).*

The interpretation of the Quran as described above draws some important conclusions that describe the development of the embryo into a full human being. Thus, in Usul Fiqh four

schools (madzhab) are generally found to be possible in the justification of abortion before the period of one hundred and twenty days. Quoting the verse above, in sharia stem cells are prohibited but on the other hand stem cells are of great use in the medical field. The only treatment acceptable then, using stem cells, is that which has the potential for application in overcoming various types of diseases. There are groups that are pro and contra this practice with embryonic stem cells and their own views are founded in both positive law and shariah.

Act No. 36 of 2009 on Health, in Article 70 states that the use of stem cells can only be sanctioned for the purpose of healing diseases and restoring health, and that it is prohibited for reproductive purposes to use treatment that originates from embryonic stem cells. These problems are the basis of the establishment of public policy in terms of stem cell research and as public policy must not only encompass ethical problems, but also religious, legal, political and economic concerns. (Citrawathi and Desak Made, 2001).

The problem statements of this study are as follows

1. How is the use of human embryonic stem cells in the treatment of stroke viewed from the perspective of Article 64 of Act No. 36 of 2009 on health?
2. How is the use of human embryonic stem cells in the treatment of stroke viewed from the perspective of Shariah?

The objectives of this study are as follows:

1. To determine the use of stem cells in the treatment of stroke as viewed from the perspective of Article 64 of Act No. 36 of 2009 on Health.
2. To determine the use of stem cells in the treatment of stroke as viewed from the perspective of Shariah.

Discussion

The use of embryonic stem cells in the treatment of stroke is viewed from the perspective of Article 64 of Act No. 36 of 2009 on health.

Stem cell technology research has caused controversy when many researchers wanting to develop this technology, which can bring many benefits. The use and development of stem cells in research and its application in the clinic, in order to treat the disease cannot be separated from ethical issues, in particular the use and utilization of stem cells derived from embryos (Embryonic stem cells).

The use of adult stem cells does not cause much controversy for the treatment of diseases that are difficult to cure. Generally, medical services using stem cells are permissible, in accordance with Article 64 of Act No. 36 of 2009 on Health, where it is stated that disease healing and health recovery can be achieved through transplantation of body organs and / or tissues, drug implants and / or medical devices, surgery plastic and reconstruction, and the use of stem cells. However, medical services with stem cells are related to norms and religious issues as in Article 2 of Act No. 36 of 2009 on Health.

The therapeutic use of stem cells in stroke recovery when using materials stem cells of the



human body itself is not haram/ forbidden (Autolog), and further if the use of another person's body also is not forbidden, then organ transplant and or blood transfusion are permissible. Furthermore, considering that stem cells are emergency therapy or the only therapy, in this case stem cells are the only option remaining that can save life, this is also allowed (Results of interviews with Dr. Riyanto Irawan. Chair of Indonesian Doctors Association, IDI, Serang, 28 July 2015) However, if the stem cell treatment using material from pigs or dogs then it is considered forbidden (haram by shariah).

This study attempts to examine the use of stem cells in medical services for the treatment of stroke. As described in the previous section, strokes are degenerative diseases that are difficult to cure. Based on this, the government has made arrangements regarding the stem cells derived from embryos (Embryonic stem cells) as defined in the legislation. In law of health, the development of science and technology as a result of Indonesian culture is based on divine morality and just and civilized humanity, (Setiawan and Boenjamin, 2014). The foundation of philosophy that the research and application of biotechnology genetic engineering for the purpose of medical treatment (cloning therapeutic) was given the green light because it was deemed to have a benefit for mankind. Conditional to its use in accordance with the informed consent and reserved informed consent as signposts that must be obeyed by any researcher, in order to prevent misuse of the genetic code and genetic information, it is anticipated that there will be potential for violations of rights in contractual relationships (Veronica Komalawati, 2001).

The rights of patients / narcotics / clients are regulated in Health Act No. 36 of 2009. Before this constitution, these rights was previously also regulated in Government Regulation No. 39 of 1995 on Health Research and Development. Chapter IV describes the protection and human rights as a subject of research and study the implementation of sanctions if violated provisions of the Government Regulation. All research concerning humans should be based on moral and ethical Pancasila, in addition to research ethics guidelines that have been agreed internationally. It is an obligation for all that our research can be justified in terms of scientific, moral and ethical based Divinity and Humanity.

Therefore, basically all studies that use humans as subjects must obtain an Ethical Clearance, whether it is research that takes specimens or not. This study is biomedical research which includes research on pharmaceuticals, medical devices, radiation and shooting, surgical procedures, medical records, biological samples, and epidemiological, social and psychosocial research, as established by the Department of Health (Department of Religion of the Republic of Indonesia, 2002).

Therefore in order to protect human beings as subjects of health research and development, since 1991 formed "Health Research Ethics Committee of the Agency for Health Research and Development" by Decree of the Head of Research and Development of Health No. 04 / BPPK / AK / 1/1991. The committee in charge of conducting a review of health research proposals that require a license to conduct (ethical clearance) has, since 2001 been referred to as the Ethics Committee of Research and Development of Health.



The application of artificial insemination for pregnancy unnaturally can be implemented to help the couple conceive an heir. This effort can only be done with the provision that the result of fertilization of sperm and ovum comes from the husband and wife concerned and are planted in the wife's womb from which the ovum originates. The procedure must be performed by a health specialist who has the expertise and authority to do so, and at a specified health facilities that have been determined (Saputra and Virgi, 2008).

Under the implementing regulations namely Minister of Health Regulation No. 72 / Menkes / Per / II / 1999 on the Implementation of Artificial Reproductive Technology, the Ministry IVF was issued Guidelines on Hospital Directorate and Private Specialized Hospital Ministry of Health of Indonesia, in 2000. In these guidelines it is stated clearly that it is forbidden to produce human embryos only for research. Research on embryos is only carried out if the purpose of the study has been very clearly formulated and it is prohibited to conduct research on or using human embryos that are more than 14 days old (excluding storage days in very low temperatures / storing frozen). Prohibited conduct or research or experimentation on embryos, ova and spermatozoa without special permission from whom the egg or sperm was obtained, are forbidden fertilization procedures unless recognized as a way to overcome or diagnose human infertility.

There is legislation regarding bioethics aspects in research and development, as well as the application of biotechnology based molecular biology and genetic engineering technology, such as: transgenic experiments, cloning, experimental stem cells, and others that touch the dignity and life value of organisms (especially humans), handed regulation in the Law on Health and on the consideration of the National Bioethics Commission. The Health Act states that the use of stem cells can only for healing purposes and health recovery, as well as that it is prohibited to be used for reproductive purposes. (Article 70 paragraph 1). Furthermore, stem cells as referred to in paragraph (1) may not originate from embryonic stem cells.

The results of the study also contain a social function for the population of the communities where the research was conducted. Therefore, the service should be accessible to people who need it and be cheap, non-discriminatory (gender sensitive) and not give rise to stigmatization or be intended only for certain ethnic group Eugenic.

Therapeutical cloning is permitted because it has enormous benefits compared to its disadvantages. Potential use of stem cells is very broad, among others, to understand the complex beginnings of embryonic development and test the effects of toxicity and teratogenic effects of various drugs. Other potentials largely and eagerly awaited by mankind are its use for the millions of patients waiting for the implementation of stem cell culturing techniques to treat stroke, diabetes mellitus, myocardial infarction, Alzheimer's and Parkinson's, which in the initial research phase have proved successful. Considering the principle that life must be respected from the beginning of fertilization of eggs and sperm cells, the use of therapeutical cloning, is not permitted to use embryonic stem cells, nor should use cells -selipudot blastocyst cells that are totipotent because until now the complete organism cannot be



predicted to occur.

Similarly, the pluripotent morulla stage cells because until now, cell types or tissues that have the potential to be formed cannot be predicted. In addition, it is not permitted to cause excess numbers of embryo in the laboratory. Thus the basic stem cell research that can be done is by using multipotent cells or adult stem cells that have clearly been able to form special cells. It is expected that the problem of research ethics, which was initially very concerning, is now no longer an ethical issue. More importantly, the Indonesian National Bioethics Commission has recommended that the use of stem cells of any kind is unethical when used for reproductive cloning purposes, because it is considered to dictate new individuals by previous individuals so that it disturbs the noble dignity of humans as God's creation.

Fostering and strengthening the capacity of the Medical and Health Ethics Commission at the institutional level needs to be supported by regulations or standard guidelines, thereby granting approval for a proposed ethics of stem cell research that can be properly justified. Furthermore, it must be followed with strict supervision and monitoring action. Government is expected to direct the policy of basic and applied research to legislate all its implementing regulations in accordance with the rules of universal ethics. Including the conditions for private companies that will utilize the results of applied research should not be about monopolistic practices, especially just for profit oriented or improper and excessive. As quickly as possible, patent rights should be released to be enjoyed by the public.

The application of genetic engineering in the field of medical biotechnology, and in addition based on national legal norms as described above in Indonesia are normatively also based on international human rights instruments.

The use of aborted fetuses to create stem cells is opposed by many parties. Stem cell research with human embryos is considered a cannibalistic act against children who have failed to be born due to abortion. The act of abortion has been regulated in Act Number 36 of 2009 on Health, Article 75 states that every person is prohibited from having an abortion except with an indication of a medical emergency, also Article 70 states that the use of stem cells can only be for the purpose of healing diseases and health recovery and as well is prohibited for reproductive purposes and may not originate from embryonic stem cells.

The use of embryonic stem cells in the treatment of stroke is viewed from the shariah perspective.

Ethical-religious assessment of research using pluripotent cells originating from human embryos in Islam can be inferentially derived from Shariah rules relating to fetal survival and embryo purity in classical and modern legal decisions. Shariah treated the source of cells originating from fetal tissue resulting from abortion, analogically similar to the donation of corpses to organ transplants to save other human lives, and hence, the use of cells from these sources is permitted. In this study, three types of sources in the Islamic tradition will be appointed to assess the legal status of human embryos: first, interpretations of the verses of

the Al-Qur'an and Hadith of the Prophet Muhammad S.a.w. which deals with embryology; second, the works of Muslim scholars who talk about the viability of the fetus as a fatwa Indonesian Ulama Council, and the third juridical literature references that explore questions about the moral status of the human fetus law. Historically, the debate about embryo in Islamic judicial sources have been dominated by issues related to the legal and moral status of the fetus.

In addition, in order to provide a comprehensive picture representing the four thoughts of Sunni scholars (Hanafi, Maliki, Syafi'i and Hambali), this study refers to research conducted by Prof. Abdulaziz Sachedina, in Lukmansjah Masputra regarding ethical position on embryonic stem cell research, which has been examining the diverse legal decisions made by the major Sunni scholars on the status of the human embryo and abortion-related issues to conclude religious guidelines for any research involving human embryos (Sachedina and Abdulaziz, 2010). Based on theological and ethical considerations derived from the verses of Al-Qur'an, which describe the embryo journey to the stages of personality development and the stage of 'soul-making' and personality processes that occur from time to time almost simultaneously, it appears that the majority of jurists Sunnis hold virtually no problem in supporting ethics in stem cell research promising potential therapeutic value, as long as the expected therapeutic benefit not only something that is speculative.

The beginning of the embryo's life is an important moral and social question in the Muslim community. Anyone who has followed the debate of shariah legal experts on this matter, has been faced with the question that the answer is different at different times proportionally, in accordance with the scientific information available. Therefore, in every period of Islamic law are rulings (fatwa), which are consistent with the findings of science and technology available at the time. Searching for a satisfying answer, regarding when the embryo achieved legal rights continues to this day. The life of a fetus in the womb, according to the Qur'an, goes through several stages, which are described in detail and precisely. In the chapter "Al Mu'minun" (Q. 23), it is following verses:

وَلَقَدْ خَلَقْنَا الْإِنْسَانَ مِنْ سُلْطَانٍ طَيِّبٍ ﴿١٣﴾
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الْمُضْغَةَ عِظْمًا فَكَسَوْنَا الْعِظْمَ لَحْمًا ثُمَّ أَنْشَأْنَاهُ خَلْقًا آخَرَ
فَتَبَارَكَ اللَّهُ أَحْسَنُ الْخَالِقِينَ ﴿١٥﴾

Translation: *Certainly We created (khalaqna) man from an extract of clay. Then We made him a drop of [seminal] fluid [lodged] in a secure abode. Then We created the drop of fluid as a clinging mass. Then We created the clinging mass as a fleshy tissue. Then We created the fleshy tissue as bones. Then We clothed the bones with flesh. Then We produced him as [yet] another creature. So blessed is Allah, the best of creators (khaliqin). (Q. 23:12-14).*

The interpreters Al-Qur'an describe some important conclusions from this section that describe the development of the embryo into a full human person. First, the creation of man as part of the Divine will determine the course of the stages of embryonic development for

human beings. Second, it shows that the moral personality is a process and future outcomes, in the development of a biological embryo when Allah says: "... then We develop into other creatures", the addition of the word "then" clarifies the stage where the fetus reaches personality. Third, questions are raised with regard to Shariah inheritance, as well as legal justice with regard to the rights and compensation when the fetus is recognized as a person, whether the fetus should be given personal and moral status after being in the womb in the previous stage.

Fourth, the emergence of the next judicial extrapolation, that the development of the embryo according to the Al-Qur'an allows for the emergence of differences between biological and the moral status of a person, because of the distance of time when inspiration occurs must be considered. It is also worth noting that compensation for murder under shariah be concluded on the premise that fetal life begins with an appreciation of the movement in the mother's womb, which occurs around the fourth month of pregnancy. In addition, the hadith of human creation provides evidence that the creation of mankind occurred before and after inspiration during pregnancy: Each of us has its own formation in the mother's womb. First as a drop of liquid for forty days, then as a blood clot for forty days, then as a lump of meat and bone for forty days, then the angel is sent to blow the spirit to him (Sahih al-Bukhari) and Sahih al-Muslim, Kitab [qadar] Takdir).

Ibnu Hajar Al-'Asqalani (w.1449) commenting on the tradition above, states:
The first organ that develops in the fetus is the abdomen as the fetus needs to eat. The provision of food plays a very important role because the problem of growth is highly dependent on nutrition. It does not require sensory perception or movement at this stage because it is just like a plant. Sensation and volition are only given when the fetus does have the spirit or soul (nafs) (Fath al-bari Syarah fi al-Sahih al-Bukhari, kitab al-qadar, 11. P. 48)

The majority of Sunni scholars make a distinction between the two stages in pregnancy, namely before and after the end of the fourth month (120 days) when the inspiration takes place. That is why the majority of Sunni jurists generally argue that it is possible to justify abortion before the period of one hundred and twenty days. On the other hand, there are scholars as shariah jurists who have been very careful in making a difference, because they consider the embryo at the pre-inspiration stage as a life and its destruction as sin. Generally, all parties agree that the sanctity of fetal life should be recognized after the fourth month.

The classic formulation based on the Quran and Hadith does not provide a universally accepted definition of the term embryo. The basic source also did not specify the exact moment when the fetus has moral and legal protection rights as human beings who have been born. With advances in the study of anatomy and embryology, it is ensured without a doubt that life begins in the womb at the time of conception and during the production of the zygote after fertilization.

As a result, from the earliest stages of conception, embryos as living beings with sanctity of life must be protected against aggression. Scientific information has turned into a legal versus ethical dispute among Islamic jurists over the permissibility of abortion during the first four



months and the destruction of unused embryos, which according to this information, are considered living things in in vitro fertilization clinics.

Some scholars have asked to disregard the sanctity of fetal life and therefore allow the termination of the fetus at an early stage before the one hundred and twenty days. A number of prominent Sunni scholars indicate that the aggression against the human fetus is against the law (illegal). Science and experience have opened new horizons that have determined that the signs of life begin from the moment of conception. However, in devotion to God, research using human embryos can be justified if the deed is done in an effort to improve human health.

The questions still to be answered by expert's shariah in the context of stem cell research on human embryos is, when does the union of sperm and egg get legal and moral rights in the Shari'ah? Most of the opinions of modern Muslim scientists, talk about the current beyond the blastocyst stage when the fetus turns into a human. Not all living organisms in the womb have the right to obtain the same level of purity and honor, as does a fetus at the turn three times the first forty days.

The anatomical illustration of the fetus from the conception to become human completely, has been closely compared to three 40-day gestational periods, to show that the growth of clear forms and evidence of signs of movement began after the spirit was blown. This opinion is based on the classic reference delivered by a prominent Sunni jurist, Ibn al-Qayyim (d. 1350) (Ibn al-Qayyim, *al-Tibyan fiaqsam al-qur'an* P. 255):

Does the embryo move voluntarily or have a sensation before the soul is blown? It is said that the fetus grows and eats like a plant. He has no voluntary movements or ability to absorb food. When the motion of inspiration takes place, the ability to move to absorb food is added.

Because there is no juridical-religious body that represents the worldwide Muslim community, various Muslim countries have followed different classical interpretations about fetal viability. However, based on all available evidence, it is possible to propose the following, to be accepted by all schools of thought in Islam, namely the Quran and Hadith that consider human life conceived occurs at a final stage of biological development of the embryo. The fetus is given a legal status persona only in the final stage of its development, when its form is clear and it demonstrates ability to move. Therefore, in the early stages, such as the occurrence itself in the uterus, the embryo cannot be considered as having a moral status.

The attitude of the Quran on the criteria for moral status enables legal experts to make a distinction between biological status and when the fetus has moral status, which is at the last stage, after at least three times forty days of pregnancy. The will of God in the Qur'an is often interpreted as a natural process that is not to be intervened in by human actions. Therefore, in Islam, research on stem cells is possible with bio-technical intervention at an early stage of life, and is considered as an act of faith in the final will of God as the giver of life end for all creatures, as long as that the intervention is aimed at improving human health.

Associated with taking stem cells from an embryo abortion, the Shariah is no different from positive law. The act of abortion can be categorized as a desecration of the sanctity of the man himself. The act of abortion is allowed if the situation is really a pinch. In accordance with the rules of Shariah, when it is allowed for an emergency it should be measured by the level of its emergency. The emergency limit here is only one, when the fetus is left to threaten the life of the mother, because the mother is the base of the life of the fetus as far '(branch). From this explanation it is assumed that stem cells from embryos could be collected if there is an emergency for mothers who are having abortions because the abortion procedure is feared to threaten the life of the mother. In this case it would not arbitrary to have an abortion, but it really is an emergency and has been observed by a doctor with a careful examination, and with an overview of the various aspects related.

Wibisono (2015) states, the use of embryonic stem cells for any purpose is not permitted, unless the therapy is the only solution to save human life. This is in accordance with the rules of Islamic jurisprudence that “الضرورات تبيح المحظورات” (Emergency conditions allow things that are prohibited or forbidden).

The fiqh rule is based on the chapter 2 Al Baqarah, verse 173:

إِنَّمَا حَرَّمَ عَلَيْكُمُ الْمَيْتَةَ وَالدَّمَ وَلَحْمَ الْخِنْزِيرِ وَمَا أُهِلَّ بِهِ لِغَيْرِ اللَّهِ

فَمَنْ أَضْطُرَّ غَيْرَ بَاغٍ وَلَا عَادٍ فَلَا إِثْمَ عَلَيْهِ إِنَّ اللَّهَ غَفُورٌ رَحِيمٌ ﴿١٧٣﴾

Translation : ” He has forbidden you only carrion, blood, the flesh of the swine, and that which has been offered to other than Allah. But should someone be compelled, without being rebellious or aggressive, there shall be no sin upon him. Indeed Allah is all-forgiving, all-merciful”. (Q. 2; 173)

Based on the interpretation of the verse, in this case there are illegitimate law and additional legalities implied in this verse, that is meat from slaughter which mentions the name of Allah (God) but also is referred to using the name of other than Allah. This allows humans to do something that is unlawful if in a state of emergency. According to Wibisono, the embryo is formed after conception, meaning that there is life there. So take it the same as an abortion. Exceptions to cells taken from the remaining embryos produced by IVF made from sperm and egg cells of a married couple. Ridwan Lubis also argues that embryonic stem cell therapy can only be done if there is no other way to save humanity. Even if the application of embryonic stem cell therapy in humans is carried out, it must be very careful with regard to its impact on humans, the action must be carried out in accordance with the objectives of Shariah, which is the preservation of religion, life, honor, offspring and human property.

Meanwhile, according to Ali Mustafa Yaqub, from the Indonesian Ulema Council, it was argued that embryonic stem cell therapy could be carried out, especially in a state of emergency for a person's life safety. Related to the use of human embryos, he explained, before the age of five weeks the embryo has not been blown soul, so that it could be used for

therapeutic treatment. Based on the description and opinions of various Islamic fiqh scholars who rely on the Quran and hadith, according to the analysis of this study it was found that the views of Islam are very concerned with the moral and ethics of stem cell research. Moreover, Islam is a religion based on reason, as the prophet Muhammad Saw. said that there is no religion for the unreasonable. As a mind-based religion, Islam strongly supports science by encouraging its adherents (Muslims and Muslim women) to continue to study the knowledge, starting from a very early age (in swing) until death.

In addition, the first verse of the Qur'an which was revealed, namely Iqra, ordered that Muslims explore the knowledge by reading the verses of Allah, both the verses of Kauliyah (the Qur'an) and the verses of kauniyah (nature). Furthermore, many verses of the Qur'an instruct humans to think and learn the knowledge that Allah SWT shows, including knowledge related to living things (eg creation, behavior, growth, etc.). The science which deals with Stem Cell research is certainly no exception, especially in science where it is of potentially huge benefit for millions of human beings who are suffering due to terminal illnesses that are difficult to cure.

Although not explicitly mentioned in the Qur'an regarding stem cell research still holds a noble position in the view of Islam. Islam requires its people to study knowledge in depth, as a devotion to the power of God and also as a form of responsibility towards fellow human beings. Yet as a religion that places high human values, Islam also does not abandon moral and ethical values in the study.

Conclusion

- a. The use of embryonic stem cells in the treatment of stroke is viewed from the perspective of Article 64 of Act No. 36 of 2009 on Health. Medical treatment with stem cells cannot be separated from norms and religion. Article 70 states that the use of stem cells can only be for the purpose of healing diseases and restoring health, and is prohibited from being used for reproductive purposes and may not originate from embryonic stem cells. There is further prohibition on the use of embryos older than 14 days for research. The use of stem cells taken from human embryos for any therapeutic treatment is not allowed, except when therapy is the only solution to save human life.
- b. The use of embryonic stem cells in the treatment of stroke is viewed from a shariah perspective. Shariah assessment of research using pluripotent cells originating from human embryos in Islam can be inferentially derived from Shari'a rules relating to fetal survival and embryo purity in classical and modern legal decisions. Stem cells that can be used according to shariah are derived from abortion results for medical indications that threaten the life of the mother.
The requirements for embryonic stem cell use, if originating from an abortion, must have permission from the source of the embryo. Paying attention to ethical and moral values, is the only solution to save human life. According to Islam, embryonic stem cell use is permitted with conditions in accordance with the goals of syar'i and brings



goodness and expediency.

Suggestion

The government is expected to direct the policy of basic and applied research, while legislating all its implementing regulations in accordance with the rules of universal ethics. Government, academia and the biotechnology industry genetic engineering should establish close cooperation to take advantage these stem cell research opportunities, which can be applied as regenerative medicine, rejuvenation for parents, screening new drugs and help gene therapy.

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