ETHICAL PROBLEMS OF CLONING HUMANS (SCNT)

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The article analyses ethical problems of cloning of human beings. Today scientists have opportunity to clone animals and human embryos by somatic cell nuclear transfer (SCNT), and the author considers this technology and ethical problems generated by it. The author maintains that we must divide two types of cloning of human beings: therapeutic and reproductive. The therapeutic cloning does not generate any new ethical problems or dilemmas, but it exacerbates the problems which have already existed (moral status of human embryos, health care recourses distribution, etc.). Reproductive cloning of human beings will generate as absolutely new ethical problems so new scientific solutions.

Key words: somatic cell nuclear transfer, reproductive cloning, therapeutic cloning, moral status of embryos, cloned animals, bioethics.

Yan Wilmut, the British scientist, published the article in the Nature in 1997. His scientific group cloned an animal, moreover, it was a mammal. The first clone was the famous Dolly the sheep. Now scientists have progressed on from Dolly and developed Wimut's methods of cloning. Yan Wilmut's group made almost 300 attempts and only one of them was successful. The efficiency of the method was 0.4% [1]. Now scientists can achieve 4% and more in cloning cattle despite the fact that cloning (somatic cell nuclear transfer — SCNT) appeared less than 20 years ago. The results of the scientific group in the Roslin Institute have raised many ethical issues and have made a background for a new bioethical discourse. An idea, which has caused concerns about different social, religious and cultural groups, is cloning of human beings. There are too many ethical questions connected with the issue. Will a clone have all the rights which we have? What the relations will be between a cell donor and his or her clone? Will a donor be a parent of a clone? Or their sibling? What kind of problem can the technology solve? May be it will give the opportunity to clone a relative with severe disease or a dead one. Will a clone be identical to his donor? Will it have the same personality?

Now cloning of human beings is going to be a reality. Not so long ago Shoukhrat Mitalipov, the Russian emigrant in the USA, and his scientific group cloned a human embryo from an eight-month-old baby [2]. It happened in May 2013 and in less than one year a new breakthrough was made in the field of cloning. Young Gie Chung and Dong Ryul Lee in South Korea derived embryonic stem cells from an adult 35 year old man [3]. Who knows when the technology will give the opportunity to clone an live baby? Shoukhrat Mitalipov said that now there was no such danger: his group tried to clone a monkey for several years and only one embryo had been implanted successfully, but the embryo had stopped developing after 2 months [2]. However, what had seemed fantastic even some decades ago is a reality today. That is why we should consider the

technology of SCNT and probable ethical issues of cloning human beings to be able to describe problems which may appear and bring harm to society and particular people.

There are 2 types of cloning: reproductive and therapeutic. The aim of reproductive cloning is to achieve/have/end up with an individual genetically identical to a donor (parent). The goals of therapeutic cloning are different types of treatment: curing degenerative diseases such as Alzheimer's disease or Parkinson's; curing cancer, aging; fertility treatment [4]. The Majority of fears are connected with reproductive cloning. People all over the world, believers and atheists anticipate that reproductive cloning will change our society dramatically. But therapeutic cloning is often associated with solving our permanent problems with health, it is our hope to be healthier and younger. Moreover, it is going to be a reality very soon. Many countries prohibit reproductive cloning but therapeutic cloning is legal in these countries (including the Russian federation) [5]. Religious leaders are often very suspicious to all types of cloning and they also have reasons to think in such a way.

Fist of all we consider therapeutic cloning, which seems to have less moral problems but it raises some ethical dilemmas. SCNT is a new technology and now we do not know anything about the medical risks connected with the technology. Now it is used mostly in experimental medicine.

It has been noted above that SCNT is a very expensive technology. It is obvious that a treatment using SCNT will be expensive and not available for the majority of people. Better nutrition, better physicians have always been a prerogative of rich people, but the modern technology exacerbates social differentiation. The rich will became healthier, younger and more beautiful, and the poor will be sicker, older and less beautiful. Today higher classes have a bigger superiority and the gap between people with high income and low income is increasing.

Another widely discussed problem is the usage of human embryos in research. It is obvious that many embryos will be destroyed during the treatment because of the small efficiency of the procedure. According to some religions (especially Christianity) these embryos have a moral status, so scientists and physicians don't have any rights to kill them [6]. Theologians (I mean Abrahamic religions) often argue that there are moral rules which we must not breach in any case. Their argumentation is based on religious dogmas and deonthological ethics. Therapeutic cloning or stem cell research is not a moral dilemma for deontological ethics. This ethical theory is much more protected from moral dilemmas by contrast to its traditional opponent — utilitarianism. Even some atheists and utilitarian thinkers are afraid of the idea of considering human embryos as a kind of treatment. This idea potentially is able to make human life "cheaper" and change our society or violate some groups of people. This is "a slippery slope" argument and it is based on utilitarian theory. That is why among atheists and utilitarians (which are not the same) are more proponents of therapeutic cloning. They recognize benefits to society from TC and try to make a correct calculation in their mind.

However, moral status of human embryos is not a new problem in bioethics. It had appeared even before the year 1978 when the first baby via in vitro fertilization (IVF) was born. Today we have international documents of the World Medical Association

regulating IVF and embryo transplantation; embryonic stem cell research [7; 8]. The problem is widely discussed and new recommendations about the issue appear from time to time [9]. It will be logical to consider the problem in the context of embryonic stem cell research but not in the context of cloning. So, therapeutic SCNT only exacerbates the problem, but does not raise a new one.

As a result, TC has not raised any new ethical issues, but exacerbates moral problems which have already existed. And there are two main approaches of solving the moral problems, associated with the TC: deontological and utilitarian approaches.

Considering the second type of cloning, we should note that it is not so as easy with reproductive cloning. First of all we must consider biological and ethical problems connected with reproductive cloning of animals to be ready to discuss probable cloning of humans. Cloned animals often have problems with their health [10]. Perinatal period is crucial especially to cloned animals. Mortality of a cloned offspring is bigger than animals which have been born in a natural way. They may have problems with their immune system and their inner organs are sometimes bigger than they should be. So, the same may happen with humans if scientists will be able to clone a human being. SCNT is a technology and technologies sometimes produce defective exemplars. In the case of SCNT exemplars are alive. There are 2 ethical problems connected with this fact. 1) Who will be responsible for the defective exemplars? Scientists may spoil lives of cloned humans. 2) Regarding human beings as something which scientists can produce, develop, design is very dangerous for our culture, especially in the globalising world. A human being is becoming a thing, an artefact. A thing, a result of scientific thought and technology can hardly be named a human and it does not have human rights. There was a good example in world history when people were regarded as experimental subjects and had not any choice, autonomy. The national socialist party in Germany of the 1930s — 1940s used humans in its horrible scientific experiments, but these people were not considered as humans. Biotechnology (gene engineering, embryonic stem cell research, etc.) has already raised the problem of human-artefact, but only reproductive cloning goes so far and produces human beings, which makes human clones artefacts of technology.

Despite all this, there are also proponents of reproductive cloning, which maintain that this technology can solve our problems and make our live better [11]. People will be able to clone very ill or dead relatives. Lesbian partners will be able to have their own child. They may prefer reproductive cloning and forget about IVF or assisted insemination because in the case of cloning, two parties contribute genetic material into their future baby. We may clone famous and talented people and they may benefit Mankind with their ideas and inventions. Scientists will be able to use SCNT in their research and clone Neanderthals, Australopithecus and other species of homo. We will be able to know a lot about the evolution of homosapiens, about ourselves. We will be able to clone successful businessmen and politicians and observe them other environments. We may examine the influence of the environment and the role of genetics. Reproductive cloning of human beings will give new methods to social science, psychology and philosophy.

Will SCNT really solve these problems? And what price should we pay for this solution? To tell the truth a clone made with SCNT is not genetically identical to its donor. The clone's nuclear DNA will be identical to the donor's one, but his mitochondrial DNA will be inherited from the oocyte, which would be used in SCNT procedure [12]. So, a cloned relative will not be fully/completly genetically identical to the dead or ill person. Moreover, the process of developing of our personality is very long and it takes a lifetime. Even twins, which are natural clones, grown in the same family are not identical. As a result we don't know how the relationships will develop between a clone and their donor(s).

Another idea of using SCNT is giving life to a child from lesbian parents. It is expected that both parents will contribute to a child: the nuclear DNA will be from the donor, and the mitochondrial DNA will be from the oocyte of the second parent. But we still need almost 300 oocytes to succeed in cloning an animal (the efficiency of cloning cattle usually is 4—5%) [13]. Now we can not derive 300 oocytes from a particular woman. Even if scientists will be able to do so, what will happen if women will be given the opportunity to give birth to children without men? According to the negative scenario Mankind has a risk of becoming a community of women, which is shown in the fiction movie "Sexmission".

Another danger of reproductive cloning of humans is using this method in scientific research. The idea of cloning Neanderthals is one of the profits which can give RC [11]. It is worth noting that the famous Dolly the sheep was cloned from the sheep which had died 6 years before Dolly's birth. Neanderthal is a homo, but he is not a homo sapien like we are. It means that their moral and legal status is not clear: this being is somewhere between humans and animals. Today scientists must conduct experiments on animals and then on humans. When cloning Neanderthals becomes available, it may generate a law or a regulation, which will legally bind scientists to conduct research on Neanderthals. So, as we see, reproductive cloning of human beings will generate absolutely new ethical dilemmas and problems in contrast to therapeutic cloning, which is connected with ethical and philosophical problems that already exist.

On the other hand cloning is not a new way of reproduction: some ants and bees breed in such a way; but it is unnatural for humans. Our bisexual reproduction is very important to our biological, social and private live, it forms our society, it is a part of our behaviour; there is even a term "sexual behaviour" in biology. And we can say surely that RC of human beings will generate as ethical problems so new opportunities, but we don't have any experience how to work with them. May be RC of human beings will bring us new and useful practice and knowledge in the far future, but there should be an ethical, legal background. We need practice to develop practices and regulations connected with RC, but our first experience has a risk of becoming negative for Mankind.

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ЭТИЧЕСКИЕ ПРОБЛЕМЫ КЛОНИРОВАНИЯ ЧЕЛОВЕКА (SCNT)

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В статье анализируются этические проблемы клонирования человека. Сегодня технологии позволяют ученым клонировать животных и человеческие эмбрионы в соматической клетке ядерного переноса (SCNT). В своей статье автор рассматривает как саму эту технологию, так и этические проблемы, порожденные ею. Автор утверждает, что мы должны выделить два типа клонирования человеческих существ: лечебного и репродуктивного свойства. Лечебное клонирование само по себе не создает каких-либо новых этических проблем или дилемм, лишь усугубляет проблемы, которые уже существовали ранее (моральный статус эмбриона человека, здравоохранение, распределение ресурсов и т.д.). Репродуктивное клонирование человека создает совершенно новые этические проблемы, но также предлагает новые научные решения.

Ключевые слова: перенос ядер соматических клеток, репродуктивное клонирование, терапевтическое клонирование, моральный статус эмбрионов, клонированных животных, биоэтика.