

Fetus & Bioethics

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Abstract

Bioethics is the study of ethical, social, philosophical, and other related issues in health care. Obstetrics is a speciality dealing with two lives, mother and fetus; whose interests may not always coincide. It is essential to promote and protect interests of both the pregnant mother and her fetus. Fetus has individual status and rights. In this article, ethical aspects related to fetus are discussed. Several ethical, social, legal aspects should be considered while recommending fetal therapy. Issues regarding Fetal tissue transplantation are discussed. Abortion is one of the most controversial issue in today's world, which is discussed in ethical context. Bioethics regarding congenitally malformed fetus are highlighted. In multiple pregnancy, ethical aspects are related to many conditions which are discussed.

Keyword: Bioethics; Fetus; Fetal Therapy; Abortion; Multiple Pregnancy.

Introduction

Medicine being a science but also an art, medical ethics concern the doctor's knowledge as well as his behavior [1].

Ethics has always formed basis of good practice in medicine. In recent years ethical issues have gained more importance in public eyes, due to several significant developments. In simple words medicine when practiced at its best, seeks to do what is right and good, and ethics help in defining and achieving that goal [2].

John William's stated that:-At all times and in all cultures, ethics have been at the heart of medicine. Medical ethics guides physicians in their relationship with patients, colleagues, their patients and society in general. It provides standards of behavior and decision making that enable physicians to know what is expected of them by their colleagues, their patients and society in general [3].

Bioethics is the study of ethical, social, legal, philosophical and other related issues arising in health care and the biological sciences. Ethics has always formed basis of good practice in medicine. Medical ethics are based on moral, religious and

philosophical ideals and principles of the society in which they are practical. Physician is always concerned about the legal basis of his acts on the basis of ethical perspectives. Law and ethics may conflict with each other [4].

These days fetus has been given individual status and rights. In obstetric practice, it is essential to promote and protect interests of both the pregnant mother and her fetus. With advent of modern technologies and emerging branch of fetal medicine, obstetricians have to face ethical dilemmas related to many fetal issues. Covering all the aspects related to fetal issues is beyond the scope of this article. In this article, we highlight bioethics related to fetal therapy, fetal tissue transplantation, abortion, congenital malformation of fetus and multiple pregnancy [5].

Fetal therapy is the operative branch of fetal medicine, including a series of interventions performed on the "sick" fetus with the aim of achieving optimal fetal well-being. There are several ethical, social, legal factors that should be considered while recommending the options [6].

Parents have to be Counseled on

- Maternal and fetal risk

- Type of interventions
- Cost, hospital stay

Fetal Therapy is the exciting new field of expertise for limited but expanding indications. There is wide potential for further development and research, though many obstacles need to be overcome, ethical issues to be solved. For all interventions, mothers are counseled by specialists (Obstetrician, Pediatric surgeons, Neonatologists, Ultrasonographers, Anaesthesiologists, social workers) [6].

With improvements in fetal imaging modalities, there is rapid developments in field of fetal therapy. Safety efficacy and long term outcome of fetal interventions must be evaluated. Fetal therapy must be implemented in clinical practice with ethical principles. Obstetrician must balance benefits with risks and harm to mother and fetus [7].

Fetal therapy should only be offered when there is good chance that if of fetus will be saved, or irreversible damage by the disease or disability is prevented. When fetal therapy is required, maternal choice is considered, risks involved in the procedure explained to mother. Fetal therapy should be given in centers with sufficient expertise for fetal medicine, consent of mother is necessary, counseling should involve explaining potential risks and morbidities. Irrespective of gestational age, fetus is dependent on the mother, so mother is involved in treatment, so maternal consent for any fetal therapy is required [8].

Depest States That

Ethically mother should be explained that

- Fetus will suffer from irreversible and serious damage without interventions
- Available evidence of effectiveness of its treatment with very few fetomaternal risks.
- Autonomous decision of mother will be accepted.
- ❖ A referral for second opinion to another Centre with expertisation in the procedure is ethical.
- ❖ According to ethics of fetal surgery, moral status of fetus is same as neonate. Obstetrician has duty towards fetus who will become a born neonate. Irrespective of gestational age, fetus is dependent on the mother and her body so mother is always involved, while explaining about the treatment to be given to fetus, mother has the right to refuse treatment [8].

Shelley Shringer Discusses Problems in Fetal Medicine

- Obstetrician taking care of mother, who made the diagnosis may be different than physician who

treats the condition in-utero.

- Optimal agent and depth of anesthesia both for fetus and mother.
- ❖ Best method to control bleeding.
- ❖ To maintain fetal exposure.
- ❖ To monitor both patients.
- ❖ To prevent preterm labour.
- ❖ To prevent leak of amniotic fluid.
- Feto-maternal physiology and metabolism pose distinct challenges.
- Pregnant woman has ethical obligation to accept fetal therapy for a fetus if therapy to prevent a serious disease or handicap would benefit or save the life of the fetus.
- Motive of prenatal diagnosis has changed from just deciding about medical disorders of pregnancy to active intervention for preventing long term fetal outcome [9].

Major problems associated with any invasive therapy (via needle, fetoscope, through hysterectomy) is prelabour, preterm rupture of membranes. Fetal therapy must be properly evaluated with follow up to assess long term morbidity as well as early mortality [10].

Carson Strong Opines That

The social role of newborn develops overtime, beginning prior to birth. Social interactions between fetus and others is usually present well before parturition. Psychological attachment of parents to the fetus, as well as advances in obstetric technology contribute to social role [11]. Normally there are closer ties between the physician and woman than between the physician and fetus.

In rare and tragic circumstances, the physician will save the woman. The agreement between physician and the pregnant woman is that her life has priority [12].

Frank Chervenak Discusses Ethical Dilemma

How should a physician respond if a pregnant woman with a viable fetus rejects a recommendation of fetal therapy that satisfies an ethically justified standard of care?

Informed consent should be the first response. In undertaking a further response, negotiation, the physician should acknowledge and take into account the pregnant woman's assessment of the risks and benefits of invasive fetal therapy to herself and her

fetus. Physician should persuade the mother to agree for fetal therapy and approach ethical committee also. One is justified in going beyond negotiation to respectful persuasion [13].

Fetal Tissue Transplantation

Lee Sanders et al highlighted that human fetal tissue transplantation is still experimental, and trials with animals and humans have shown limited success. But researchers and clinicians agree that, given social and legal support, fetal tissue transplants could soon promise unique therapy for dozens of crippling diseases with substantial morbidity and mortality [14].

Using Fetal Tissue for Transplantation

Fetal tissue transplantation may be able to overcome the failures of traditional medical and surgical therapy to ameliorate several diseases, most notably Parkinson's disease and insulin-dependent diabetes mellitus. The use of fetal tissue may be required to develop novel therapies for hematolymphoid diseases [14].

Human fetal tissue is an attractive source of therapeutic transplants because it has two physiologic properties that make it more useful than adult or animal tissue. First, most fetal cells are hyperproliferative and multipotent, meaning that these donor cells are capable of quickly reversing the lost function of a host organ. Second, fetal cells may pose a low immunogenic threat to the cellular defenses of the host [15,16].

For logistical reasons, however, future success in human fetal tissue transplantation cannot depend on tissue from spontaneous abortions, stillbirths, and ectopic pregnancies. Unlike that from elective abortions, tissue from at least 60% of spontaneous abortions contains severe genetic defects.

Even without genetic defects, a large percentage of these fetuses do not have enough differentiated tissue to be therapeutically useful [17].

Is a Fetus a Person?

Personhood after fetal death is accepted by most ethicists and legal scholars as the easiest to assess. Regardless of its ante mortem status, a dead fetus claims the same rights as a dead person. As with any human cadaver, the closest relative or guardian of the deceased has whole authority over the disposition of the fetal cadaver. Those researchers and physicians who object to abortion are under no

obligations to participate in procedures associated with fetal tissue transplantation [18].

A fetus possesses moral integrity, unlike blood or kidney, and as such should be respected as a donor, not as a gift. By this definition, all fetal tissue donated for scientific research may be governed by the same ethical principles that govern the use of cadaveric organs [19].

Guidelines for Fetal Tissue Transplantation

The fetal tissue transplantation is ethically acceptable when following guidelines are observed:

- Fetal tissue derived from dead fetuses resulting from elective abortions should be included under the principles of the Uniform Anatomical Gift Act [20].
- The donor and donor family should be disconnected from the process of choosing the transplant recipient [21].
- Financial incentives to a donor's family, physicians, researchers, or any other party involved in the donation of fetal tissue should be prohibited.
- Women donating fetal tissue should not be permitted to designate specific recipients of that tissue [20].
- Informed consent specific to the use of fetal tissue for research and transplantation should be made available to all women whose aborted fetuses may be used for the purposes of transplantation [21].
- Donor tissue should be acquired discreetly and rapidly. The most recent review of the literature indicates that the therapeutic function of grafted dopaminergic cells is greatest when the donor tissue is fresh [21].

The tissues from anencephalic fetuses can be used for the purpose of donation and transplantation. Several countries including India accept the use of tissues from anencephalic fetuses for therapeutic purposes. Obstetrics deals with miracles of life. Science of obstetrics has advanced at a rapid pace [5].

Abortion

Obstetrics is a specialty dealing with two lives, closely linked, whose interests may not always coincide. Hippocrates considered termination of pregnancy as unethical. Time has changed and abortion has been accepted by many societies, the

health of the mother being the most important consideration. Abortion is one of the most controversial issues in today's world. People tend to turn to the law when trying to decide what is the best possible solution to an unwanted pregnancy. "Antagonistic relationship" between the woman and her unborn child may occur [22].

Whether fetus in utero has rights before viability is a subject of dispute and opinion. In any case, the embryo or fetus of any age is protected by Hippocratic code.

"I will maintain the utmost respect for human life, from the time of conception."

Every human has the inherent right to life. Right to life is inherent in a person, a human being. Who is a human? When does a developing embryo become a person. It is extremely difficult to draw a line and say that the developing zygote or fetus become a person from a particular time. The fertilized ovum has within it all components needed for the growth and development into full person. Damages are claimed, if an injury is caused to the fetus in the womb. It would mean that fetus is a person. Can the life of a person be ended by procedures by others [23]?

Justice: It is the fair distribution of health resources and the decision of who gets what treatment is fairness and equality.

Central issue concerns the moral status of the human fetus. But what of the human being, as it develops from newly fertilized ovum, to pre-embryo, embryo, fetus, new born baby, to unequivocally mature autonomous person with full moral standing including a moral and legal right not to be killed at least [24].

Aborting a Malformed Fetus

Parents have a desire to have a child of a certain quality. Bringing up the child with disability can cost money and use up resources. Congenital anomalies contribute a significant proportion of infant morbidity and mortality, as well as fetal mortality. A congenital anomaly is defined as an abnormality of structure, function or body metabolism that is present at birth and results in physical or mental disability, or is fatal. A debate regarding aborting a malformed fetus still exists. In the system of human rights, there is often a need to balance rights against each other. The right to the life of the mother and the same right of the fetus [25].

Ethical Issues In Multiple Gestation

The prevalence of high-order multiple (HOM)

pregnancies has increased because of ovulation induction, assisted reproductive technologies, and spontaneous conceptions in older mothers [26]. The number of multiple births would be higher if it were not for selective reduction, spontaneous reduction or early gestation sacs or embryonic loss of one or more conceptus [27]. Assisted reproductive technology has made great progress during the last three decades. After the initial enthusiasm, many ethical, legal and social issues related to the application of these procedures began to evolve [28].

Ethical Issues in Multiple Pregnancy are Multidimensional having many Aspects

- Fetal Reduction and Selective Termination of Pregnancy
- Congenital malformations in multiple gestation
- Fetal Therapy in multiple gestation
- Impact on parents
- Physicians perspective

Pregnancy management via fetal reduction (FR) has witnessed considerable changes over the last 25 years. These changes have taken place in medical technology outcomes, patient choices, and the larger demographic and cultural shifts that are driving the pace and direction of change [29].

Selective Termination of some of the embryos to increase the viability of remaining ones and reducing the risk of morbidity and mortality for the mother was approach to this situation. Indication transformed from the crisis of 'life and death' into issues of quality of life [30].

An ethical concern in Selective Termination is the risk for normal comultiples. At skilled centers, total pregnancy loss rates after Selective Termination are similar to spontaneous pregnancy loss rates, and deliveries occur at a better gestational age than would be expected with the original number of fetuses [31].

The reduction of twins to a singleton is acceptable in cases of maternal disease, poor obstetric outcome and compelling social and psychological reasons of the woman [32]. If two embryos have been detected, spontaneous embryo reduction has been reported to occur in 38% of cases when the pregnancy was achieved by ART and in 7.3% of spontaneous pregnancies [33].

Right to life is inherent in person, a human being. Damages are claimed if injury is caused to the fetus in womb. It would mean that fetus is a person. Can the life of a person be ended by procedures approved by others [23]?

Discussion

Decision of medical termination of pregnancy pose ethical delima. There are opponents and proponents regarding abortion. Woman has reproductive rights. Ethically she has right to decide how many children she wants to have. But, especially in India, social issues are also prevalent. Pregnant woman's family exert major influence on decision of abortion. If continuation of pregnancy will deteriorate maternal health, abortion is legally justified. In this situation, to preserve health of mother, life of embryo or fetus is jeopardized: culminating in MTP. After MTP, woman may experience feeling of guilt.

Decision regarding aborting a malformed fetus is challenging. Counselling to the parents is very important. When parents are informed that fetus has Down's syndrome, they may take decision to continue the pregnancy.

Pregnant woman may think that 'It is God's wish'; I will look after the baby. She may refuse termination of pregnancy. Principle of autonomy demands that her wish to continue pregnancy should be respected.

Delivering and raising a severely malformed and disabled baby may have an impact on the physical, mental and social life of a family. Women should have the opportunity to consider an option of not continuing the pregnancy. The decision to continue or terminate the pregnancy should always rest with the woman.

Fetal Therapy

It is ethical duty of fetal medicine team:

- To inform about prognosis.
- To explain impact of the condition on future child.
- Offer medical and educational support.
- Explain harm and benefits of intervention.
- Counsel regarding possible alternatives [8].

Fetal Organ Transplantation

Many new questions must be addressed about use of fetal tissue :-

How should foetal tissue be derived?

Which transplant recipients should be given preferences?

Which disease should be given preference?

What type of informed consent obtained [14]?

Conclusion

The concept of the fetus as a patient has developed primarily as a result of technological advances.

Moral status for a fetus possesses is independent of the mother. A fetus is a patient when medical interventions can be reasonably expected to result in a greater balance of good over harm for the child the fetus can become. (13)

It is essential to promote and protect interests of both the pregnant mother and her fetus. It is ethical that fetus is a patient, fetus has moral Right.

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