ISLAMIC VIEW POINT

on

CONTEMPORARY MEDICAL ISSUES

PIMA PUBLICATIONS
PAKISTAN ISLAMIC MEDICAL ASSOCIATION

ISLAMIC VIEW POINT ON

CONTEMPORARY MEDICAL ISSUES

PIMA PUBLICATIONS

PAKISTAN ISLAMIC MEDICAL ASSOCIATION

PIMA HOUSE 516-B, BLOCK – K

JOHAR TOWN, LAHORE – PAKISTAN

Phone: 6130603

- **Islamic View Point on Contemporary Medical Issues.**
- Editorial Board:
  1) Dr. Maqbool Ahmad Shahid
  2) Dr. Tanveerul Hasan Zubairi
  3) Dr. Ahmad Khan
  4) Prof. Dr. Khawaja Saadiq Hussain
- Publisher: Pakistan Islamic Medical Association (PIMA).
- First Edition: June 2005.
- Second Edition: March 2008.
- Price: Rs:60/-

Important Note:

The topics discussed in this publication mostly relate to the issues, which have emerged as a result of extensive research and developments in the field of medical science during last few decades, and have raised a number of ethical questions in the light of Islamic shariah. PIMA in this publication has tried to present the views of a number of learned authors on these topics as available today. We realize that these views may not be the final Islamic shariah verdict. These opinions therefore, do not represent the official position of PIMA.

CONTENTS

No.	*Subject*	*Page*
1.	Introduction.	4
2.	Birth Control.	7
3.	Islamic Perspective of Assisted Reproductive Technologies.	30
4.	Genetic Research and Prevention of Genetic Disorders.	43
5.	Organ Transplantation.	49
6.	Concept of Death in Islam and "End of Life" Issues.	68
7.	Cloning and Advances in Molecular Biotechnology: Islamic Shariah Guidelines.	74
8.	Medico-legal Issues in Patient Care.	98
9.	Anatomical Dissection of Cadavers & Postmortem Examination.	102

INTRODUCTION

The book deals with the Islamic point of view regarding the modern medical technologies and procedures relating to subjects like Birth Control, Organ Transplantation, Assisted Reproductive Technologies, Cloning etc.

As all these subjects and their related problem are new, we don't find ready-made answers to the questions regarding their permissibility or otherwise according to the Islamic Shari'ah. But the Shari'ah has devised a mechanism for the Muslim jurists to derive their religious opinions as to whether a certain procedure is permissible or not.

The primary sources of Islamic Law (Shari'ah) are the Qur'an, the true word of God, and Prophet's (PBUH) traditions and sayings that have also been preserved over the centuries as his "Sunnah". Laws governing topics that are not directly covered by these two sources are to be determined by a process of legal reasoning or *"Ijtihad"*. The rules of Ijtihad are stipulated in a well–established methodology called *"Usual–al–Fiqh"*. This process of Ijtihad takes into consideration *"Qiyas"* (analogical reasoning), *"Istihsan"* (juristic preference), *"Maslahah Mursalah"* (unrestricted public interest), *"Sadd al- Dharai"* (blocking the means), "`adat and `urf" (customary practice) and *"istishab"* (presumption of continuity).

The first principle, the *"Istihsan"* (juristic preference) allows the jurists some leeway in interpreting the law to allow for something that is

useful. In such cases it will be permissible to allow the spirit of the law to prevail over the letter of the law. A second principle is the blocking of the means, which is "when `a' lawful means is expected to lead to an unlawful (or harmful) result or that a lawful means which normally leads to a lawful result is used to procure an unlawful end, then the means itself becomes unlawful.

The third principle is "public interest". In defining "public interest "the jurists have to weigh the benefit that may occur to an infertile couple by having a child versus the harm that it may cause to the resulting child and in the long run, any harm that may afflict society as a whole. In a case where the harm outweighs the benefit that procedure becomes impermissible.

Public interest has to be defined by adhering to the five basic objectives of Islamic law, which are "preservation of faith, life, intellect, property and posterity". The discussion here centers on the preservation of posterity.

The family and blood relations in Islam have very important legal status. The Qur'an emphasizes the centrality of the family unit. The mutual decision of males and females to marry and have children is considered one of God's bounties.

The duties of parents towards their children and of children towards their parents are emphasized. Blood relations have a special status in legal matters. *"And those related by arham (kindered by wombs) have prior rights against each` other in the book of God." (Al-Anfal-75)*

Laws of marriage and inheritance are well defined and based on these family relationships. So it is very essential, from an Islamic point of view, for every child to know the identity of his father and mother. The concern that is similar to the importance modern laws give the biological father and mother in contemporary parlance. The strict moral laws and prohibition of fornication and adultery is part of the stress on the preservation of progency (lineage).

In Islam the family is based on marriage. The marriage is controlled by rules. The marriage contract with all its legal consequences of mutual rights and responsibilities of husband and wife viz a viz one another and viz a viz their progeny. It is under this protective umbrella that children are to be born. In Islam the right of legitimacy is a basic right and every person has the right to be the legitimate child of his or her parents. Violation of this closely built arrangement can play havoc with the society.

All these considerations are important in relation to the discussions which follow in the book.

Reference:

Hossam E. Fadel. Assisted Reproductive Technologies: An Islamic Perspective.

FIMA Year Book 2002.

BIRTH CONTROL

Introduction

Birth control has two aspects:

1 Family Planning i.e., limiting the number of children in a family to a specific number.

2 Population Control i.e., the regulation of the growth of population in such a way that it does not exceed a certain limit.

The concept of birth control is based on the Malthusian Theory which states that while the harvest reaped from available land is limited, the rate of growth of human population is not; consequently it will continue to increase and will eventually reach an explosive proportion whereby the available land will not be able to support the vastly expanded population. Malthus stated that to control the growth of population, the husband and wife should exercise self restraint for curbing population growth. Owing to mass propaganda, the phobia of "population explosion" reached such proportions that any and all methods, including abortion to control population growth were advocated and accepted. However, at present the situation is such that abortion even of well formed fetuses is considered justified and has been legalized in many countries. This is despite the fact that Malthusian and Neo-Malthusian theories over the past two centuries have been disproved, and the myth of "population explosion" laid bare.

The most glaring example of the falsity of this theory can be observed in Pakistan where the wheat was being imported during 6th to 8th decades of the last century when the population ranged from 70 to 120 million. Then there was a period when the country had surplus wheat which was being exported while the population had risen to above 140 million.

The Islamic View

In order to understand whether Islam permits or prohibits birth control certain basic and essential concepts need to be enunciated and clearly understood. These are based on the Holy Quran and the Sunnah of the Prophet (S.A.W.). Their validity cannot be questioned by our limited knowledge of Islam, preconceived notions, selfish motives and apologetic attitudes.

Consider the answers to the following questions:

(i) As Muslim, what is our belief?

(ii) What is our concept of Allah?

(iii) What is our position in the universe?

(iv) What is basic economic principle in Islam?

As Muslims it is our belief that Allah the Almighty is Rabb-ul-Aalameen i.e Lord of the Universe. The quality of Rabubiyat belongs to Allah i.e., He is the Creator, Nourisher, Sustainer. Protector, Preserver and Master of all that is in the Universe.

We believe that Allah has created us and the universe and made all the necessary and complete

arrangements for our sustenance before our creation. It is Allah who has taken upon Himself the responsibility to sustain all the creatures on earth. Allah states in the Quran:

"There is no creature on earth but whose sustenance is on Allah" (Sura IX, verse 6)

Allah Taala has also undertaken to maintain a balance in the production of crops and the supply of all our essential needs in proportion to our requirements. Nothing has been created in an unbalanced or disproportionate manner. The source of all potential forces and energies being with Allah, it is inexhaustible and unlimited. Allah states in the Quran:

"And there is not a thing but its treasures are with us, but We only send down thereof in due and ascertainable measure"(Sura VX: Verse 21)

It is an accepted and recognized fact that the potential of a piece of ground to bear fruit crops and vegetation is not limited by Allah to a specific amount. Modern methods of irrigation and cultivation have been responsible for a tremendous increase in the output of the same piece of ground, which used to bear a limited percentage of crop or was altogether barren, desert land.

To think that Allah has forsaken the world and that population explosion would occur so that man would starve to death is the view of a person who does not believe in Allah. Allah is an Ingenious Power, the best of planners and can accomplish anything. As Muslims we firmly believe in this concept and

therefore cannot accept the economic reason for birth control.

That the increase in population should be curbed for economic reasons is not a new proposition. This concept was prevalent during the Jahiliyyah (pre-Islamic) period.

The Quran should be read and understood in the proper perspective. In Surah Bani Isreal from verses 23-31,the Qruan teaches us the following:

(i) To worship none but Allah

(ii) To be kind and fulfill ones duties to one's parents.

(iii) To help the poor, weak and needy.

(iv) Not to be extravagant nor practice niggardliness.

(v) Allah provides sustenance for whom He pleases.

(vi) Not to kill children for fear of want.

In another verse Allah warns:

"Kill not your children for fear of want: We shall provide sustenance for them as well as for you: Verily the killing of them is a great sin." *(SURAH XVII, VERSE 31)*

Some of the Arab tribes practiced female infanticide. Even now infanticide is practiced in many countries for economic reasons. The key words are ``for fear of want``. To kill children out of fear of

poverty and thereby try to curb the population is an abhorrent idea, which the Qur'an cannot tolerate and does not propagate.

The protagonists of birth control have exploited the similar mentality of present day man to the maximum. They declared that if no attempts were made to curb the rate of population growth, then there would soon be insufficient food for people to eat.

Such thinking is totally repugnant to the spirit of Islam. It is diametrically opposed to the teachings of the Qur'an. The Qur'an makes it clear, in no uncertain terms, that it is Allah and Allah alone who provides mankind with sustenance. A person can only give to another person what he himself has received from Allah.

Allah created both man and woman and assigned different roles, responsibilities and functions to them. Procreation and reproduction of mankind is a basic object of marriage in Islam and therefore any action which has an effect of curtailing or stopping altogether this process cannot be acceptable from the Islamic point of view.

The Glorious Quran proclaims: ``O` *mankind be conscious of your Sustainer, who has created you out of one living entity, and out of it created its mate, and of the two spread a multitude of men and women.*``

``*And God has given you mates of your kind, and has given through your mates children and grand children. (Al-Nisa-4)*

Prophet Muhammad [PBUH] said to all muslims:`` Get married ,beget and multiply because I will be proud of you among the nations. He (PBUH) also said:``marry the kind and fertile, for I will be proud of your numbers among other nations. (Musnad Ahmad)

The desire to have a small family is not validated by the notion that one has to undergo many difficulties: this is the result of non-Islamic thinking. There is no justification to encourage this kind of thinking.

Birth control should be viewed in the light of the above facts. Nevertheless, Islam being a perfect code of life permits certain methods of contraception for particular cases and for specific reasons. This is explained in the next section.

It may however, be stressed that in an Islamic society all such relaxtions are limited to individual cases and circumstances. There is no place for national "Family Planning" or "Population Control" programmes at government or non-government (NGO) levels in an Islamic state.

CONTRACEPTION

Basically there are two forms of contraception.

(a) The reversible methods:-

i- physical; Coitus interruptus.

Rhythm method (Safe period).

ii- Mechanical; Intra-uterine devices.

Condom/diaphragm.

iii- Chemical; Oral contraceptive pills.

Locally acting spermicidal jellies.

(b) The irreversible methods: These are the sterilization operations:

Vasectomy in the man.

Tubal ligation in the woman.

As far as the reversible methods are concerned, Islam allows the physical methods viz. coitus interruptus and the rhythm method. The husband must however, seek the consent of his wife when practicing coitus interruptus. During the period in which the Quran was revealed, Azal (coitus interruptus) was practiced by the Arabs, but it was not prohibited by any verse. However, it seems that the prophet (S.A.W) did not approve of it entirely. Once a Sahabi told the prophet (S.A.W) that he practiced coitus interruptus. The prophet (S.A.W) thrice commented: ``O, so you practice Azal?" in such a manner that it was evident that he did not approve of it entirely. Morever, that which is destined to happen will take place. In this

case it so happened that the Sahabi concerned did have a child despite his practicing Azal.

The mechanical and chemical methods are permissible only under special circumstances (mentioned later) provided they do not transgress any fundamental Islamic laws e.g., they should not be harmful to the user. Therefore keeping in view the permissibility of physical methods, mechanical and chemical methods may be allowed, as they are also reversible. The physician must ensure that there is a proper indication for their use and that they would be safe for the user. Condoms and 'spermicidal jellies' are considered to be safest among reversible methods. The ruling of the Shari'ah on sterilization operations is as follows:

Vasectomy in the man:

This is totally prohibited in Islam. It cannot be sanctioned by the Shari'ah under any circumstances. Islamic Law also prohibits castration. A common factor between vasectomy and castration is that both destroy the power of reproduction in man, although the ability to cohabit is still present after vasectomy. It is a cause of murder of the future generation.

Tubal ligation in the woman:

This cannot be declared permissible as a general rule, because it renders a woman incapable of conceiving. There is a possibility that factor on account of which she is being counseled for tubal ligation might change thereafter. However, there

would then be little hope of her becoming pregnant again.

However, if an honest and experienced doctor fears that the life or permanent mental / physical health of a woman would be seriously affected by a pregnancy and there is no other cure for her sickness, in such a case only would tubal ligation be permissible. A common known indication is repeated C-sections in a woman who cannot deliver the baby normally.

Conclusion:

It must be made clear that while certain methods of contraception are permissible in Islam, they can only be used under the circumstances sanctioned by the Shari'ah. These specific circumstances are dealt with in the following lines.

Family Planning for Social Reasons:

Islam does not sanction family planning to meet with the demands of present day fashion or social reasons e.g., it is fashionable to have small families: having a large family may curtail the social activities of the wife: having many children may spoil her ``figure''. Although Islam encourages a woman to look well and to beautify herself for the sake of her husband, it does not sanction the same for the sake of public approbation, which is the present trend. The Holy Quran says:

"And tell the believing women to lower their gaze and guard their modesty: that they

should not display their beauty and ornaments except what (must ordinarily) appear thereof: that they should draw their veils over their bosoms and not display their beauty except to their husbands... ''
(Al-Noor-31)

Family Planning for Professional Reasons:

As far as the practicing of Family Planning for professional reason to facilitate a wife to pursue a career is concerned, it should be made clear that Islam places no burden on the shoulders of a woman or any responsibility for her to earn a living. Her maintenance before marriage is the responsibility of her father, after marriage her husband, and in old age her children. Islam does not want that a woman works like a labourer in the markets or be exploited economically. The general rule, therefore, is that it is not permissible to control the birth of children on account of professional reasons.

Nevertheless, it cannot be denied that there are cases where a woman is forced to seek employment to maintain her children or family on account of desperate circumstances. Under such circumstances it would be permissible for the couple to adopt reversible methods of birth control.

This relaxation, however, does not apply to those women who merely try to maintain a very high standard of living; or who try to earn and accumulate as much wealth as possible in order to keep in step

with the current fashionable trends. This would defeat the object of the creation of woman and destroy the family unit, which is the foundation of every society.

It is against the spirit of Islam that women leave their homes in pursuit of professional careers, money and social status. Allah advises Muslim women in Quran as follows:

"Stay in your houses and do not go about displaying your fineries as women used to do in the days of ignorance." (Al-Ahzab-33)

But another important point needs a special mention here. Islam lays great stress an providing education and health facilities to all citizens. To provide these services to the female population the female educationists and health personnel will have to come forward to run the women educational and health institutions. It will, therefore he imperative for the female teachers, doctors, nurses and other para-medical staff to leave their houses. There may be some other outdoor professions where the services of female workers would be required. An Islamic society and the country administration will have to make special arrangements to facilitate their work and also allow them special concessions. These working women will have to abide by all rules of "hijab" as mentioned in Quran and Sunnah.

Family Planning for Spacing Children:

The concept of spacing children means the practice of contraception in order to allow a reasonable time period between the birth of any two children: the

purpose being that each child receives adequate attention of the mother in its upbringing. In the difficult task of nourishing, training and educating a child, the full attention of a mother is required. If a baby is born every year, then it is extremely difficult to provide the necessary care and attention for each child. From the discussion in Raddul Mohtar and other books of Islamic jurisprudence, it can be deduced, that if another pregnancy would seriously affect the care and upbringing of the existing child, then reversible methods of birth control may be practiced.

Thus family planning towards the spacing of children, so that each child receives adequate attention, would be permissible in Islam. However, it must be emphasized that even this concession should be treated with respect. It must be made clear that spacing of children should not be used as a pretext for continuing family planning for an indefinite period, for this will be contrary to the injunction of our Holy prophet (S.A.W) who said: *"Marry and procreate"*

Family Planning for Medical Reasons:

There might be a number of situations where contraception may have to be considered for medical reasons. For instance, if having children endangers mothers physical health, mental health or even her life, or a women is physically crippled and is unable to care for herself, or a women suffers from a psychiatric illness, incompatible with the responsibilities of bearing and caring for a baby or she is suffering from a fatal disease with limited life expectancy. A doctor's opinion may be sought in all such and other similar

cases.

If an experienced doctor, in all honesty and sincerity, is of the opinion that having children would endanger a mother's physical health e.g., if she is suffering from cardiac disease, renal disease or her life would be threatened, then it is permissible for the couple concerned to practice reversible methods of contraception. The same ruling applies if a mother is physically crippled and therefore unable to care for a child, or if she is suffering from a psychiatric illness. It must be stressed that the decision to practice family planning under such circumstances does not rest upon the couple concerned. The decision must be taken by a physician and must be based on medical grounds.

Risk of Genetic Diseases:

In certain families there may be a risk of a baby born with a genetic disease e.g., mongolism, haemophilia, thallasaemia etc.

If it is the opinion of a responsible and an experienced physician that there is a high risk - not just a vague suspicion of a baby being born with a serious genetic disease, then it is permissible to adopt reversible methods of birth control.

From this it is apparent that there is a role for the Muslim doctor in genetic counseling. The risk of a baby inheriting a serious genetic disease should not be based on mere suspicion. Reversible methods of contraception should be advocated in those cases where the risk of a baby being born with a serious genetic disease is high.

Advice to the Non-Muslim Patients:

At times, the non-muslim patients may seek the advice of a Muslim doctor regarding contraception, sterilization and abortion.

The attitude of a Muslim doctor at all times must be in consonance with the teachings of Islam for all his patients. Therefore, a different standard with regard to contraception and sterilization for non-Muslim patients cannot be adopted.

ABORTION

In Islam, abortion is primarily a prohibited sphere. The general rule is that abortion is ``haraam''. Under certain circumstances, however, an abortion may be permissible. According to the Shari'ah, the sin of abortion, once the limbs have formed, is the same as murder. An abortion prior to the limbs being formed would not carry the sin of murder, but still is a major sin.

In Islam abortion will only be allowed if continuation of pregnancy is going to endanger the life or health of expectant mother: or there is proven serious congenital anomaly in the embryo or fetus. The performance of abortion should be done prior to 120 days from start of conception, which is considered according to a Hadith (saying) of the prophet [PBUH] to be the time of ensoulment. However, if the life of the expectant mother is endangered, and not only her health, abortion or preterm delivery can be performed at any time of pregnancy to save her life. Three

specialist physicians should agree upon the decision of abortion with clear medical indication.

This was the ``Fatwa''(legal opinion) of the Islamic jurists of Makkah al Mukarramah (Islamic World League) held in Makkah from 10 to 17 February 1990. However the decision was passed by the majority of votes, with abstention of the president the late Shaikh Abdulaziz Bin Baz and Shaikh Bakr Abu Zaid.

Many Islamic jurists are more stringent and would allow abortion in the first 40 days of conception (computed from fertilization and not LMP). In fact this was the official Fatwa in Saudi Arabia, until the fatwa of Islamic jurists council of Makkah extended it to 120 days from start of conception.

More conservative jurists like the Maliki and Imam Ghazali (from Shafi School of jurisprudence) will not allow abortion at any time of pregnancy except to save the life of the expectant mother.

Nevertheless there are some jurists who will allow abortion for social reasons e.g., rape or where continuation of pregnancy will affect a nursing child and where a wet nurse is not available or the father is too poor to afford a wet nurse. Prominent among those allowing abortion are Zaidi School of jurisprudence who will allow abortion for social and minor medical reasons in the first 120 days of conception. Some jurists of Hanafi. Hanbali and Shafi school will follow suit with minor restricitions. However the majority jurists throughout history will not allow abortion except for strong medical reasons. This arises from the respect of Islam for life. There are a lot of Quranic

verses and Ahadith regarding the sanctity of life.'

``We decreed upon the children of Israel that who so ever kills a soul for other than manslaughter or corruption in the land: it shall be as if he killed all mankind, and whosoever saves the life of one, it shall be as if he saved the life of mankind.
(Al-Maida-32).

Ibn Mas'ud, a companion of the Prophet (PBUH), asked him. What is the gravest sin? The Prophet [PBUH] answered ``That you associate partners with God Who created you'' Ibn Mas'ud asked: What is next to this? The Prophet answered ``That you kill your offspring for fear of them sharing your food with you'' (Bukhari and Muslim).

Though Muslims at large, consider the embryo from its earliest stages to be living, they do not give it the status of a full human life except after ensoulment. Ibn Qayyim in his book' al Tuibian fi Aqsan al Quran' bring this question by asking ``Does the embryo before ensoulment (breathing of the spirit into it) has a life?'' He answered yes, the embryo has the life of growth and nourishment like of growing plant, but once the spirit is breathed in he acquires perception and volition.''

Similarly Ibn Hajar al-Asqalani discussing which organ forms first in the embryo in his

voluminous Fatah al Bari says: "the liver is the first organ formed as it is the site of nutrition and growth. Voluntary movement and perception are acquired only after ensoulment."

Ensoulment only occurs after many stages which the embryo passes. The Glorious Quran says:

"We created man from the quintessence of mud. Thereafter, we cause him to remain as a drop of fluid (Nutfah) into something that clings (Alaqah), which we then fashion into a chewed lump (Mudghah). The chewed like lump is then fashioned into bones, which are then covered with flesh. Then we nurse him into another act of creation. Blessed is God, the best of artisans. (Al-Muminun-12-14)".

All the Ulema (Muslim scholars) and commentators of the Glorious Qur'an agree that the "other act of creation" mentioned above is the time of ensoulment when the spirit is inspired into the body of the fetus.

The Hadith of the Prophet (PBUH) narrated by Ibn Mas'ud "The creation of each one of you is collected in the womb of his mother in forty days. And something that clings (Alaqah) he become in forty days, and then he becomes a Mudgah (a chewed lump) for forty days. The angel is sent to him and the angel writes four things: his provision (sustenance), his life span, his deeds and

whether he will be wretched or blessed. Then the spirit is breathed into him".
(Al-Bukhari, Muslim, others).

This simply means that ensoulemt occurs at 120 days computed from the beginning of conception. However there is another Hadith narrated by Huzaifa Ibn Aseed which made some Muslims jurists decide that forty days computed from the beginning of conception is the line of demarcation and the beginning of human life.

"When the Nutfah enters the womb and stays there for 42 nights, God sends an angel to give it a form and create its hearing, sight, skin, bones and flesh. Then the angel asks, ``O God is it a boy or a girl? And God determines whatever He decides. He then asks what is his livelihood and God determines". (Muslim).

It is interesting to note that organogenesis i.e., formation of organs in the embryo takes place between the 4th and 8th week of conception (computed from fertilization) and reaches its zenith at 42 days. The embryo has unidentified gonad until that period after which the gonad differentiates into either a testes or an ovary. Similarly the brain stem forms and starts to function in an embryo of 42 days. However the higher functions of the brain are still forming and the cerebral cortex does not have synapses with the lower centers except at the beginning of the 20th week computed from last menstrual period which is equivalent to 120

days computed from fertilization (viz beginning of conception). Dr. Koren presented a paper in the conference on Ethics of Organ Transplantation in Ottawa, Canada August 20-24, 1989, in which he proved with dissection of many aborted fetuses that synapses between the higher centers of the cerebrum and the lower centers does not start to work except in the beginning of the 20th week of pregnancy computed from the LMP which is equivalent to 120 days computed from moment of conception (fertilization).

It is evident that both sayings of Prophet Muhammad [PBUH] speak of different times of development of the fetal Central Nervous System (CNS), the Hadith of 42 days refers to the development and functioning of the brain stem, while the Hadith of 120 days speaks about the higher centres and their control over the lower ones in the CNS.

There are several Ahadith (sayings of the Prophet Muhammad PBUH), which assign to the conceptus an important status that gradually increases, with the time of pregnancy. If a lady commits a crime punished by the death penalty, then the fulfillment of the penalty is postponed until delivery and nursing of the baby for two years, or if a wet nurse is available, for a much shorter period. This applies even if the pregnancy is illegitimate.

The fetus has the right of lineage of his father, and if his father dies while he is in utero, his share of the inheritance will be kept for him/her until delivery.

Killing the fetus intentionally or unintentionally is penalized by paying 1/20 of the diyyah (blood fine), which is equivalent to 500 golden dinars. There is

another penalty to be decided by the magistrate for intentionally induced abortion.

Shaikh Mahmud Shaltut (grand Imam of al Azhar in the forties and early fifties of the 20th century) wrote:

> *"Old scholars are agreed that after quickening takes place (120 days of conception, abortion is prohibited to all Muslims, for it is a crime perpetrated against a living being. Therefore blood ransom is due if the fetus is delivered alive and ghorra (1/20 of the diyah) if delivered dead."*

Imam Ghazali (died 505 H =1122 AD) in his well-known book *'Ihya `Ulum al-din'* considered abortion at all stages of conception to be *Haram* (sinful) with a gradation of the sin along with the advent of pregnancy. It is tantamount to manslaughter if he is delivered alive and then dies because of the abortificient act or drug. However, he recognized that the abortion of a Nutfah (at 40 days) is much less of a crime than the abortion of `Alaqah (40 to 80 days), which is less than the abortion of Mudghah (80 to 120 days). It becomes a full crime after ensoulment i.e. after 120 days. In his opinion, abortion should be avoided at all stages of pregnancy except if the life of the expectant mother is endangered.

Abortion on demand, as carried out in many countries, which liberalized abortion laws, will never be condoned in Shari'ah (Islamic law).

Abortion for Malformed Fetus:

Many have recognized abortion for a seriously malformed embryo or fetus. The time limit for carrying such abortions is 120 days computed from fertilization which is equivalent to 134 days from the last menstrual period which is equivalent to 19 weeks approximately.

The Islamic jurisprudence council of Makkah al Mukarramah (the Islamic World League) passed a fatwa No.4 (Legal Resolution)in its 12th session held on 15-22 Rajab 1410H (10-17 February 1990) which allowed abortion if the fetus is grossly malformed with untreatable severe condition proved by medical investigations and decided upon by a committee formed by competent trustworthy physicians and provided that abortion is requested by the parents, and if the fetus is less than 120 days computed from moment of conception.

The fatwa was a landmark, as previous fatwas only allowed abortion in the first 40 days of conception. At such a period it was almost impossible to ascertain any of the congenital or hereditary diseases. By extending the time of permissible abortion to 120 days computed from the moment of conception, gives ample time to ascertain the diagnosis of severely affected embryos and fetuses. Abortion is one of the reproductive options offered to manage and prevent genetic diseases causing malformation.

Genetic diseases include not only single gene disorders, but a wide array of syndromes which include chromosomal, multifactorial, mitochondrial,

and somatic cell genetic disorders.

A large number of these fetal conditions can be diagnosed at about 18 weeks after last menstrual period using modern diagnostic techniques.

The following conditions which can be diagnosed using ultrasonography need special mention.

A CNS disorders.
Anencephaly.
Acrania.
Encephalocele.
Spina bifida.
Meningocele.
Holoprosencephaly.
Arnold Chiari Malformation.
Hydrocephalus.

B Renal.

Polycystic Kidneys.
Multicystic Displastic Kidneys.
Gross Hydronephrosis due to obstructive urophathy.
Renal Agensis.

C Anterior Abdominal wall Defect.
Omphalocele.

D Respiratory System.
Pulmonary Agenesis.
Cystic Adenomatoid Malformation.

E Cardiac Defects.
Monoventricle.
Transportation of great vessels.

Abortion in a Physically or Mentally Crippled Mother:

This is a situation where a pregnant woman is so crippled due to a physical or mental illness that it is not possible for her even to take care for herself. Obviously, it will not be possible for her to feed and nurse her baby. In all such cases a realistic assessment should be made as to whether the mother will be able to cope with the process of labour normally or by intervention and whether a wet nurse is available to feed and nurse the baby or it is possible to give the child for caring or adoption. Abortion may be permitted within 134 days post LMP, only in truly genuine cases where no alternate arrangements are available.

References:

1) Qazi Mujahid Islam, Family Planning and Abortion. An Islamic Viewpoint PIMA publications Lahore.

2) Muhammad A. Albar

Induced Abortion: Is it still criminal or just elective? With Emphasis on Islamic Perspective. PIMA Year Book, 2002.

ISLAMIC PERSPECTIVE OF ASSISTED REPRODUCTIVE TECHNOLOGIES

Assisted reproductive technologies (ART) refers to all the techniques involved in the management of infertility that require the handling and manipulation of gametes and embryos and treatment modalities to induce ovulation or spermatogenesis. Techniques of in vivo assisted reproduction facilitate the fertilization of the gametes within the reproductive tract of the wife. This may be achieved through the procedures of intrauterine insemination (IUI), intratubal insemination (ITI) and gamete intrafallopian transfer (GIFT). Mating of the gametes occur extracorporeally during in vitro assisted conception. The modalities to facilitate the fertilization in vitro followed by transfer into the reproductive tract include in vitro fertilization and embryo transfer (IVF-ET), pronuclear stage tubal transfer (PROST), zygote intrafallopian transfer (ZIFT) and tubal embryo stage transfer (TEST). More radical forms of micro-manipulation techniques have been recently developed to assist fertilization of men with severe infertility. These include intracytoplasmic sperm injection (ICSI) and micro injection of round spermatid nuclei into oocytes (ROSNI).

Dr Edwards, an embryologist and Dr. Steptoe, a gynaecologist in the United Kingdom first pioneered the fertility technique called In Vitro Fertilization Pre-Embryo Transfer (IVF-ET). In july 1978, they announced to the world the birth of the first test-tube

baby, Louise Brown which was a landmark achievement in the science of reproductive medicine.

Since then, a myriad of assisted reproductive techniques have surfaced, further refining and superseding earlier technologies.

Since the introduction of IVF-ET technology, well over 500,000 babies have been born. The probability of a successful pregnancy is dependant on a variety of factors including the age and the reproductive health of the wife and the husband.

Even though, reported success rates from ART programs can be very confusing and misleading, the probability of a successful outcome has improved from virtually zero to 30-50% at ART centers worldwide.

These new technologies in assisted reproduction have provoked considerable discussions and debates across all segments of human society. These revolutionary procedures in ART have probed the outermost boundaries of what is scientifically possible and acceptable. Micro manipulation at the very carliest stages of human development is a very delicate and sensitive issue with potentially explosive ethical, social, medico-legal and religious ramifications. Hence the turbulant and not uncommonly hostile controversies that have since evolved.

Infertility – Islamic Viewpoint:

The desire to have one's own offspring is a very strong human instinct. The Quran, the Holy Book of Muslims, documents this fact:

``*Wealth and progeny are the allurements of*

this world''. (Ibrahim-46).

A common supplication of Muslims is:

``And those who pray Our Lord grant unto us spouses and offspring who will be the comfort of our eyes''.
(Al-Furqan-74.)

On the other hand, Muslims believe that God ordained that some couples would be infertile:

"He creates that He wills. He bestows male or female children to whom He wills. He bestows both male and female children (to some) and He leaves barren whom He wills". (Shoora-49-50).

Islam also acknowledges that infertility is a significant hardship. The Quran gives the example of two prophets, Abraham and Zachariyya, Peace be upon them, who were barren and described how they longed to have children of their own even as they grew old and almost despaired of having children.

"Then did Zachariyya pray to his Lord, saying, O my Lord! Grant unto me from you a progeny that is pure for You are He that hears the Prayers". (Al-e-Imran-38).

The method they used to achieve their goal was to ask God repeatedly and sincerely with humility and faith. Eventually God answered their prayers.

"And the angels gave Abraham glad tiding of a son endowed with knowledge!"(Al-

zariat-28).

This does not mean that Islam asks the infertile couple only to pray to overcome this problem: A basic Islamic principle permits persons facing hardship to use all lawful means to solve their problem while at the same time preserving their trust in God that He will help them achieve their goal. This is especially true in matters of health and disease.

The Prophet Mohammad (PBUH) stated:

"For every disease God has created a cure except senility (meaning death). So progency of Adam seek cure for your ailmants (Mishkat).

This is conditioned on the non-use of unlawful means and to sincerely believe that God is the ultimate source of cure. As Abraham is reported in the Qur'an as saying.

"And when I get sick it is He (God) who cures me."

(Al-Sho'ara-80)

Thus it is clear that infertile couples are instructed and encouraged to seek cure of their infertility but within the limits of what is permissible in Shari'ah (Islamic jurisprudence). The command to seek cures for disease also applies to physicians and other healthcare providers, and thus discovery of new methods for the treatment for infertility, as well as all other diseases, is in principle a perfectly legitimate pursuit, but with the restriction of not using harmful or illegitimate methods. The Qur'an describes as losers in

the Hereafter, those who

"Learn and follow that what harms them and does not benefit them. (Al-Baqara-102)

One supplication of the Prophet (PBUH) is: "Oh God teach me what is useful" also "I seek God's refuge from all knowledge that is harmful" (Muslim).

Until recently the treatment for fertility was mainly by medications to correct hormonal deficiency or surgery to correct anatomical defects and were mostly non-controversial from an ethical or religious point of view. The recent advent of assisted reproductive technologies (ARTS) changed this situation dramatically. It basically transferred the process of procreation from a private personal relation between husband and wife into artificial means in the lab, and in many instances, the involvement of a third or a fourth party in the process. These changes in the procreative process challenged basic religious and ethical concepts.

Assisted Reproductive Technologies – The Islamic Fundamental Principles:

The Islamic Organisation for Medical Science (IOMS) first addressed this issue of assisted reproduction in their Fiqh Medical Seminar in May 1983. The IOMS seminars are always well attended by distinguished jurists, shariah experts, medical practitioners, scientists and specialists in other human sciences. Based on the conclusions of the Fiqh Medical Seminar of the IOMS and the opinions of other

medical–shariah authorities in this area of ART, the fundamental ground rules which must be adhered to diligently by any Muslim practitioner of ART, can he summarized as follows:-

(1) The sanctity of the marital contract must not be violated at any point in time during the ART process. The Muslim practitioner of ART must guard jealously the purity and legality of the sperm and ovum of the couple. Since the union of the sperm and ovum is occurring one step beyond the act of sexual coitus, the fusion must take place within the jurisdiction of a marriage contract.

(2) The dyad (pair) of the legal husband and wife must not be intruded by any third party. The involvement of a third person in the equation is totally unacceptable whether this takes the from of a sperm, an ovum, an embryo or an uterus. Hence the widespread practice in ART facilities of sperm, ovum and embryo donation and the ''rental'' of uterus is incompatible with the Islamic injunctions related to human reproduction.

(3) Once the marital contract has been terminated either due to divorce or death of the husband, assisted reproduction cannot be performed on the ex-wife or widow using sperm cells from the former or dead husband or using the previously cryopreserved embryos of the couple. The stored semen and cryopreserved

embryo of her ex or dead husband now becomes alien to her and the latter to either party.

(4) In ART programs, the excess pre-embryos produced can be frozen and stored in liquid nitrogen, a technique called cryopreservation. This can only be undertaken after the free informed consent of the couple is obtained. The excess pre-embryos continue to remain the property of the couple. It can only be transferred to the uterus of the wife and only during the validity of the marriage contract.

(5) Cryopreservation should only be allowed in specially designated sperm and pre-embryo banks or ART centres accredited by the relevant health authorities. An accurate and fool proof system of documentation must be in place to guard against mixing of lineages and commercialism. Confidentiality of information should not be breached and tight security procedures should prevent unauthorized access to records.

(6) Credentialling of all staff participating in the ART program is of utmost importance to ensure the highest of professionalism, trustworthiness, integrity and responsibility. Strict adherence to evidence based reproductive medicine, clinical practice guidelines and a code of ethical ART practice by all related professionals would help to protect the infertile couple who are often very

desperate. emotional and hence very vulnerable to the unethical and profit driven ART practitioner. Hence the latter three qualities of trustworthiness, integrity and responsibility often supersede the string of professional qualifications.

(7) Many countries have now restricted the number of eggs or embryos which could be placed in a woman in any one cycle. The recommended clinical guideline in Malaysia is that no more than 3 eggs or embryos can be implanted into a woman in any one cycle. However, up to a maximum of 4 eggs or embryos may be transferred if two conditions are met; firstly, the patient has undergone no less than 2 ART attempts which were unsuccessful and secondly, the patient is between 35-45 years of age. If the procedures of stimulating and monitoring egg production are closely monitored and the numbers of embryos implanted are restricted, then the likelihood of generating excessive multifoetal gestation would be minimized. However, if despite this, in excess of three foetuses are gestated, pregnancy reduction is permissible if the prospect of foetal viability is compromised or if the health or life of the mother is threatened. Multiple pregnancy of an order higher than twins presents an increased health hazard to the gravid mother and also for

her foetuses which are more likely to be spontaneously aborted or to be delivered extremely prematurely with all the attendant complications of prematurity.

(8) The abuse of infertility procedures may be prevented and other related activities of ART may be better monitored through acts of legislation . The Human Fertilisation and Embryology Act 1990 in the United Kingdom and Eire was an act of parliament which among others made provisions in connection with human embryos and any subsequent development of such embryos and to prohibit certain practices in connection with embryos and gametes. The Ministry of Health is now at the stage of drafting laws to address the activities of ART in Malaysia.

(9) There are various permutations of surrogate motherhood. In the first form, the surrogate is impregnated with the commissioning husband's semen; carry the pregnancy to term and give away the baby to the commissioning couple. The commissioning couple may via IVF transfer their resultant embryo to the surrogate mother. They therefore remain the biological parents. Or the surrogate may be impregnated with donated semen or embryo and reared by the commissioning parents. In this last case scenario, there will arise 3 sets of parents; the

rearing parents, biological parents and surrogate mother. A case was brought up in the legal courts recently about the parentage of a surrogate child. Five individuals laid claim to the child. And the court ruled that none had legal parental claims to the child! Surrogacy in all its forms is not allowed in Islam.

Islamic View on Commonly Practiced Assisted Reproductive Technologies:

I. Artificial insemination: has been used for long time. As long as it is the husband's semen that is used to impregnate the wife, intrauterine insemination (IUI) is permissible. Permissibility, however, is conditional upon insemination occurring while the marriage remains intact, thus the husband's frozen semen cannot be used after divorce or after the husband's death.

II. In vitro fertilization (IVF): IVF is a process in which a woman through hormonal manipulation is made to have several simultaneously developing ova (eggs). These are needle aspirated at the proper time under ultrasonic guidance. In the lab, sperms are made to fertilize these ova (Zygotes) when they reach the 4-8 cell stage they are transferred into the uterus, which has already been prepared by hormones to be ready for implantation of the transferred eggs. The current success rate, i.e., resulting in a live birth, is 20-30%. IVF with its various modifications i.e., GIFT (Gamete intra–fallopian transfer), ICSI (intracytoplasmic sperm injection) etc. have been declared to be Islamically permissible with the following conditions:-

(1). It involves a married couple when the marriage is valid.

(2). Sperms are those of the husband.

(3). The eggs are from the wife.

(4). Done by a ''competent team'' (to reduce the chances of failure) and to ensure conscientious handling of the process so as to ensure that the gametes of the husband and wife are the ones actually being used in the procedure.

(5). The appropriate number of fertilized eggs are transported in the uterus, to decrease the risk of triplets and higher order multiple pregnancies with increased risk of miscarriage and preterm delivery.

It is usual to transfer 2-3 fertilized eggs while there are usually more fertilized eggs produced. Freezing these fertilized ova is also permissible as long as they are only used in subsequent cycles for the same couple provided they are still married. The eventual fate of the unused eggs has not been decided upon, to my knowledge. I tend to believe that it will be permissible to use them for medical research with the consent of the couple and within the appropriate guidelines.

III. Donor eggs, donor sperms, donor embryos are unlawful.

The Quran states:

''...Then has He established relation-ships of lineage and marriage.'' (Al-furqan-54)

The use of donor sperm, eggs, or embryo will

result in the biological father or mother to be different from the "married couple." In Islamic law, this is in essence similar to adultery in confusing the lineage. Not knowing lineage may cause one to marry a brother, sister or a close relation even with the strictest guidelines to prevent this from happening.

IV. Surrogacy:

There are two types:

A. Partial: A couple will solicit /commission a woman to be artificially impregnated by the "husband" semen, to carry the pregnancy to term and then to give the baby away to the soliciting couple. In this case, the child will have the rearing father as the biological father, a rearing mother and a biological/birth mother.

B. Complete: The commissioning couple will undergo IVF and the resulting embryo is transferred to a surrogate third party who gives the baby at birth for the soliciting/rearing couple. In this case, the rearing couple will be same as the biological parents and the child will have in addition another mother, the surrogate (birth) mother. In still rare situations, the surrogate mother is impregnated with a donor sperm or a donor embryo. In such cases there will be a rearing couple, biological parents and surrogate (birth) mother who if married, her husband then can be also considered a father of the child. There are several objections to surrogacy from an ethical

standpoint mainly that it results in the commodification of motherhood. It reduces motherhood from a value to a price. Children become a commodity and the process of procreation becomes a business enterprise.

There are also many legal problems primarily of deciding who are parents and who are legally responsible for the rearing of the resulting child. This is especially true when a dispute arises among the parties to the surrogate agreement either before or after the delivery. There have been many such examples in the past. There is question in some states whether surrogate contracts are legal and enforceable and to what extent, or whether adoption laws could be enforced in these cases. Islamically surrogacy is prohibited for all these reasons. Even if there is agreement between the parties, the confusion of lineage, which is inherent in these arrangements and which as stated earlier, is of major importance in Islamic law, makes it prohibited.

References;

1) Dr. Musa Mohammad Nordin

An Islamic Perspective of Assisted Reproductive Technologies. 17th Biennial convention of Pakistan Islamic Medical Association Lahore. 30-31 March 2002.

2) Hossam E-Fadel

Assisted Reproductive Technologies : An Islamic Perspective. FIMA Year Book, 2002.

GENETIC RESEARCH AND PREVENTION OF GENETIC DISORDERS

Islamic teachings concentrate on prevention of disease rather than cure. Islam encourages marriage and prohibits fornication and adultery.

"O mankind revel your Guardian-Lord, who created you from a single soul (person), created of like nature his mate, and from them twain scattered (like seeds) countless men and women. (Al-Nisa-1)

In another ayah (verse) of Glorious Quran it orders unmarried men and women to get married.

"Marry those among you who are single (Al –Noor-32)

Prophet Muhammad (PBUH) said:

"Marriage is my way, those who shun my way are not from me (i.e., my people)" (Bukari, Muslim)

He (PBUH) said:

"If someone wants to marry and he is of good character and religion make it easy for him to marr . If you don't then immorality will spread (Abu Dawood, Tirmizi)".

He (PBUH) advised Muslims to choose for their daughters, husbands with good character and free from physical and social illness. Similarly He (PBUH)

wanted not to marry a girl only for her beauty when her character is blemished. He (PBUH) also said:

"Choose for your offspring the suitable women for heriditary plays a role". (Ibne-Maja).

He (PBUH) also advised:

"Select your spouses carefully in the interest of your offspring because lineage is a crucial issue".

"Do not marry your close relatives because you will beget weak offsrpings".

The second Caliph of Islam, Omar ibn El-Khattab, upon noting that a particular tribe intermarried with increased frequency , remarked to them:

"You have weakened your descendants. You should marry strangers (people outside your tribe)".

The spirit of the exhortations of the Prophet (PBUH) and his companions was to secure normal and healthy babies, protection of their early well being, endowed with the benefits of good genes from both parents and the prevention of congenital malformations and its consequent disabilities.

Premarital examination to avoid genetic diseases will be a welcome, especially in a community where the rate of consanguineous marriage is high.

Syphilis and other STD (Sexually transmitted diseases) will not appear if all sexual desires are

channelled through marriage as Islamic teachings imply. Fornication, adultery, and sodomy are all harshly punished in Islamic legal code. and religiously they are considered of the greatest sins that each Muslim should avoid.

Alcohol is the commonest chemical substance causing mental retardation and congenital anomaly. Islam totally prohibits imbibing alcoholic beverages. Similarly smoking causes abortion and congenital anomalies. It is prohibited in Islamic teachings and many fatwas have reiterated its prohibition. Any substance that is going to be harmful to the baby (i.e., teratogen) including drugs should be avoided as the Prophet Muhammad (PBUH) said:

"Do no harm". (Abu Dawood).

Preimplantation Genetic Diagnosis (PGD) :

In this case, in vitro fertilization is carried out. The zygotes are grown to 8 cell stage (morula stage). then a cell is removed, examined for aneuploidy (abnoumal number of chromosomes) and DNA testing for the culprit gene. If proved negative. the morula blastula is implanted. If it is positive. it is discarded and another morula /blastula tested. The beauty of this method is that it avoids abortion. However. it is yet available except in few centers in he world and the cost is significant. The success rate of pregnancy and take home baby of all in vitro fertilization (IVF) projects, is as low as 25%. There seem to be no short term risks by removing a cell from the growing morula /blastula. but nobody can ascertain the future and long term risks.

A variety of inherited diseases may now be diagnosed in the pre-embryo stage prior to implantation into the uterus. Highly sensitive polymerase chain reaction (PCR) techniques have enabled the rapid amplification of minute amounts of DNA material from the embryonic cells. Fluorescent in situ hybridization (FISH) technology with combination chromosomal probes has made possible the genetic analysis of embryonal sex and various aneuploidies.

Some of the potentially debilitating diseases which may be screened include Trisomy 13, 17 and 21, cystic fibrosis, haemophilia, Marfan's syndrome, incontinentia pigmentosa, X-linked immune deficiency, retinitis pigmentosa, fragile X syndrome, muscular dystrophy and Lesch–Nyhan disease. It is postulated that well over 200 diseases or conditions can be further isolated with ongoing PGD research.

Genetic Research & Islamic Shariah:

The First International Conference on Bioethics in the Muslim World held in Cairo from 10-13 Dec. 1991 examined very carefully this area of pre-embryo research. Collaborating this with the decisions of other scientific cum Islamic jurisprudence seminars, the following practice guidelines may be summarized:

(1) Cryopreserved pre-embryos may be used for research purposes with the free and informed consent of the couple.

(2) Research conducted on pre-embryos is limited only to therapeutic research .

Genetic analysis of pre-embryos to detect specific genetic disorders is permissible. Hence diagnostic aids should be provided for couples at high risk for selected inherited diseases. The treated embryo may only be implanted into the uterus of the wife who is the owner of the ova and only during the span of the marriage contract.

(3) Any pre-embryos found to be genetically defective may be rejected from transfer into the uterus after proper counseling by the physician .

(4) Research aimed at changing the inherited characteristics of pre-embryos (e.g., hair and eye colour, intelligence, height) including sex selection is forbidden.

(5) Sex selection is however permitted if a particular sex predisposes to a serious genetic condition. One of the first couple to use this technique of sex selection was hoping to escape a deadly disease known as X-linked hydrocephalus, which almost always affected boys. Embryonal sex selection would make possible the weeding out of other serious X-linked disorders including haemophilia, Duchenne muscular dystrophy and fragile X syndrome.

(6) The free informed consent of the couple should be obtained prior to conducting any non-

therapeutic research on pre-embryos. These pre-embryos should not be implanted into the uterus of the wife or that of any other woman.

(7) Reseach of a commercial nature or not related to the health of the mother or child is not allowed.

(8) The research should be undertaken in accredited and reputable research facilities. The medical justification for the research proposal must be sound and scientific and conducted by a skilled and responsible researcher.

(9)

Reference:

(1) Dr. Muhammad A. Albar. Ethical considerations in the Prevention and Management of Genetic Disorders wih Special Emphasis on Religious considerations. FIMA Year Book 2002.

(2) Dr. Musa Muhammad Nordin . An Islamic Perspective of Assisted Reproductive Technologoies. 17th Biennial Convention of Pakistan Islamic Medical Association Lahore-30-31 March 2002.

ORGAN TRANSPLANTATION

Introduction

The Qur'an in various passages, emphasizes the fact that Allah (SWT) is the One who bestows life and causes to die. For example:

> *It is Allah who creates you ,and takes your souls at death; and of you there are some who are sent back to a feeble age ,so that know nothing after having known (much): For Allah is All-Knowing ,All-Powerful.*
> *(Al-Nahl-70)*

Before his inevitable end the man may be afflicted with diseases which may necessitate treatment involving medical or surgical procedures. One cannot also rule out the possibility that at some point in life one of his organs may cease to function properly. In this event, depending on the nature of the damage, he may have to undergo corrective surgery or have the defective organ replaced altogether.

Insofar as organ transplantation itself is concerned one must bear in mind that both the Qur'an and Sunnah neither sanction it nor condemn it. Contemporary Muslim jurists have deliberated on the issue and proposed certain juristic guidelines based on deductions from the broad teachings of the two original sources of the Shari'ah, namely, the Qur'an and Sunnah. As normally happens in all matters not specifically dealt within these two original sources, there are difference of opinion among the jusrists.

Opposing viewpoints

Two prominent Muslim scholars who have written against organ transplantation are the late Mufti Muhammad Shafi of Pakistan and Dr `Abd al Salam al- Sukri of Egypt.

Similar views were also expressed by Syed Maulana Abul Aala Moudoodi of Pakistan. Mufti Shafi holds organ transplantation as not permissible on the basis of the following principles: sacredness of human life/body: the human body being an amanah (trust); and finally that such a procedure would be tantamount to subjecting the human body to material ends. These principles may be elucidated thus:

A. Sacredness of human life/body.

In the Hadith literature it is recorded that the Prophet Muhammad (PBUH) made the following declaration in his Farewell Sermon (Khutbat al Wada`a):

"Your life. your property and your honour are sacred until you meet your Lord''.

This view also gains support from the following hadith:

"Breaking the bone of a dead person is equal in sinfulness and aggression to breaking it while a person is alive." (Abu Dowood).

In the light of the above hadith the following questions may rightly be asked: How can one therefore

be permitted to cut up a man's body and remove an organ from it? Would that not constitute an act of aggression against the human body and thus tantamount to mutilation of the body?

B. The human body as an amanah

The Holy Qur'an (17:70, 21:20) tells us that Allah (SWT) has honoured man, made serviceable to him whatever is in the heavens and on earth as a blessing and mercy. Likewise, it also mentions that Allah (SWT) has endowed man with all that he is in need of in respect of bodily organs (90:8). This understanding would lead one to infer that man has no right to donate any of his organs since these organs are not in reality his own, but have rather been given to him as an amanah (trust).

C. Subjecting the human body to material ends

In the Fatawa Alamgiriyyah, it is stated that if a person, owing to hunger, finds himself on the verge of death, and is unable to find even the meat of a dead animal in order to save himself and at that instant is offered human flesh, it would not be permissible for him to partake of it.

Favourable viewpoints

To date, no Muslim scholar has offered to write an argument unreservedly in favour of organ transplantation. However, Muslim scholars in various parts of the world have either written arguments in favour or issued positive religious decress (fatawa) on

the issue.

Muslim scholars who advocate the permissibility of organ transplantation are of the opinion that it should be recognized as a from of altruistic service to fellow Muslims. Their stance on organ transplantation may be summarized as follows:

A- Al- maslahah (public welfare).

It is true that Islam forbids any kind of aggression against human life as well as the body after death. Thus if one were to take an organ out of the dead man's body so as to transplant it into another person, it could justifiably be argued to be tantamount to mutilation of the body and violation of the sanctity of the corpse. However, it is to be noted here that the Islamic legal system takes the interests of man into consideration. This accounts for the following juridical rules:

(i) Necessity makes the unlawful permissible.

(ii) When two interests conflict let the one which will bring greater benefit take precedence.

(iii) If forced to choose, choose the lesser of the two evils.

The above rules are founded on the principles of establishing what is in the general interest and preventing what is against it. So, if the general gain outweighs the negative aspect of an action, it is allowed, but if the negative consequences of such an action outweigh the good then it is prohibited.

In this context, for example, Islamic Law would permit the cutting of the belly of the dead pregnant woman in order to remove the foetus should any movement be detected. Thus, the right of the living supersedes consideration over the dead.

Hence, following the same line of argument, after a person has died, it would be justified to retrieve the desired organ from that person's body for the purpose of transplantation into that of another living person. This act would be regarded as a commendable gesture since as a result of this procedure, the quality of life of the living would be enhanced.

It ought to be noted, however, that Muslim scholars who advocate the permissibility of organ transplantation do not give outright approval for the practice. They are of the view that the permissibility of organ transplantation should be hedged with certain restrictions as enumerated below:

1.That the transplantation is the only form (means) of treatment.

2.The expected degree of success of this procedure is relatively high.

3.The consent of the owner of the organ or of his heirs has been obtained.

4. Death must have been fully established by Muslim doctors of upright character before such a venture is undertaken.

5.The recipient has been informed of the operation and its implications.

6. It is NOT done on commercial basis.

B- Al- Eisar (Altruism).

The Holy Quran and Sunnah exhort Muslims to co-operate with one another and to strengthen the bond of brotherhood among them. The Quranic imperative in this regard is:

"Help you one another in righteousness and piety". (al-Ma'idah,-2.).

And from the Sunnah the following hadith may be cited:

"The believers, in their love and sympathy for one another, are like a whole body; when one part of it is affected with pain the whole of it responds in terms of wakefulness and fever." (Bukhari).

Thus in the light of the above teachings, a living person's gesture to donate one of his organs to a sibling or another person who may be in dire need of it should be viewed as an act of altruism that of some people sharing what they have for the benefit of others. Here again, the following restrictions should be taken heed of:

1.The consent of the donor must be obtained.

2.That the transplantation is the only form of treatment possible.

3.That there is no obvious danger to the life of the donor.

4.The respective transplantation has been proven successful in the past.

C- Sale of organs.

Insofar as the selling of human organs is concerned, Muslim scholars concur that such sale would be considered a great sin according to the Islamic Shariah.

D- Non Muslim organs

The permissibility for Muslim to receive the organs of non-Muslims is based on the following two conditions:

1. No organs are available from Muslim.

2. A Muslim's life would be in danger should the transplantation not be carried out.

Resolutions of International Islamic Juridical Academies.

In Saudi Arabia, there are two International Islamic Fiqh Academies. One of them is based in Makkah and the other in Jeddah. The Makkah academy functions under the auspices of Rabitat al-Alam al- Islami (Muslim World League) and certain prominent Muslim scholars from all over the world have been co-opted as its members. Its religious decrees are issued in its journal Majallat al-Majma al-Fiqhi which is published bi-annually The Jeddah academy is an organ of the Organisation of Islamic Conference (OIC). Its officials are drawn from member states and from some other countries. Its

resolutions and recommendations are collated and published.

A- Resolutions on Autotransplant.

The Council of the Islamic Fiqh Academy of the Makkah, at its eighth working session (1405AH/1985) resolved that it is permissible within the Shari'ah to take a part of the human body and transplant it into the same body like removing the skin or bone in order to graft it to some other part of that same body.

The Council of the Islamic Fiqh Academy of the Organisation of Islamic Conference, Jeddah ,Saudi Arabia, at its fourth working session (1408AH/1988) resolved that from the Shari'ah point of view an organ may be transplanted from one part of the body to another part of that same body, provided it could be ascertained that the benefits from this procedure would outweigh the harmful effects of it. Furthermore, it resolved that it is also permissible for such a procedure to be undertaken for the purpose of replacing a lost organ, or reshaping it, or restoring its function, or correcting a defect, or removing a malformation which was the source of mental anguish or physical pain.

B- Resolutions on Homotransplant/ allotransplant.

The Council of the Islamic Fiqh Academy of the Muslim World League, Makkah, at its eighth working session (1405AH/1985) resolved that it is permissible within the Shari'ah to remove the organ from one person and transplant it into another person's

body in order to save the life of that person or to assist in stabilizing the normal functioning of the basic organs of that person. Likewise, the Academy pointed out that such a procedure does in no way violate the dignity of the person from whose body the organ had been removed. Hence, the act of donating one's organ is to be viewed as a permissible and praiseworthy act as long as the following conditions are met:

(i). That the donor's life is not harmed in any way.

(ii). That the donor voluntarily donates his/her organ without any form of coercion.

(iii). That the procedure is the only medical means available to alleviate the plight of the patient.

(iv). That the success rate of the procedures for removing and transplanting the organ is relatively high.

Insofar as corneal transplant is concerned the Council of the Islamic Fiqh Academy of the Organisation of Islamic Conference, Jeddah, Saudi Arabia, at its fourth working session (1408AH/1988) resolved that from the Shari'ah point of view such a procedure is permissible.

C- Resolution on Heterotransplant.

The Council of the Islamic Fiqh Academy of the Muslim World League, Makkah , Saudi Arabia at its eighth working session (1405AH/1985) resolved that it is permissible within the Shari'ah to transplant into a human being the organ of an animal which has been slaughtered according to Islamic rites and/or that of other animals out of necessity.

The Inclusion of Organ Donation into one's Will.

Al-Wasiyyah is the Arabic equivalent of what is termed today as the last will and testament. The question arises whether one can include the will of donating one of his organs for the purpose of transplantation after his death in his wasiyyah.

The Council of the Islamic Fiqh Academy of the Muslim World League. Makkah, at its eighth working session (1405AH/1985) resolved that it is permissible in Shari'ah to remove an organ from a dead person and transplant it into a living recipient, on the condition that the donor was sane (mukallaf) and had wished it so.

The Council of the Islamic Fiqh Academy of the Organisation of Islamic Conference (OIC), during its fourth session held in Jeddah, (1988) resolved that it is permissible from the Shari'ah point of view to transplant an organ from the body of a dead person if it is essential to keep the beneficiary alive, or if it restores a basic function to his body, provided it has been authorized by the deceased or by his heirs after his death or with the permission of concerned authorities if the deceased has not been identified or has no heirs.

The above resolutions, we may safely assume, provide a valid theoretical basis for the inclusion of organ donation in one's will. The considerations that have played a major role in influencing the adoption of these positive resolutions for the inclusion of organ donation in one's will relate to what are termed as (a) al- Eisar (altruism i.e generosity towards humankind)

and (b) al-darurah (the rule of necessity).

Insofar as who would have the authority to assent to a donation of a dead person's organs in the event that no such clause has been stipulated in the will of the deceased, the Council of the Islamic Fiqh Academy of the Organizations of Islamic Conference concur that the legal heirs could give the necessary assent for that.

THE CONCEPT OF BRAIN DEATH AS APPLICABLE TO ORGAN TRANSPLANATION

The cadaveric organs may be an important source of organs for the purpose of transplantation. Organ procurement for such transplants relies mainly on the diagnosis of brain death. If ''brain death'' is detected and declared at an early stage the organ for transplantation can be removed from the cadaver when it is still perfused and devoid of irreversible changes. This ensures the quality of the organ taken and better chances for its functioning in the recipients body.

Definition of the End of Human life

In medical literature, a cadaver means a deceased person's body. The literature does not pay much attention to what occurred first, brain death or heart death. In Anglo-Saxon literature, a cadaver generally means the body of a brain-dead person. A situation where life is being supported by means of life-supporting machines while the heart is still functioning, and the brain is not, has for a long time been a topic of many ethical and religious discussions, both in terms of justifying supporting the heart activity, and in terms of discontinuing its support. Today, among Islamic jurists there is still a discussion

going on as to whether such is obligatory at all or not, especially in much delicate and expensive situations as supporting the heart activity by creating artificial conditions that enable it to function and when to discontinue such support. This has been addressed by *fatwa* (legal opinion) of the Islamic Jurisprudence Academy (Majma' Al-Fiqh Al- Islami) affiliated to the Organization of Islamic Conference (OIC) on "when death occurs''?

The person is legally dead if the following two signs were noticed:

(1). If the heart and lungs completely and irrecoverably stop functioning. The decision must be taken by the physicians.

(2). If all the functions of the brain irrecoverably come to a complete stop. The decision must be taken by the experienced specialist physicians. In this case it is justifiable to remove the resuscitation apparatus from the patient even if some organs such as the heart were still functioning due to the use of apparatus connected to the patient.

Therefore, human life ceases with the end of heart activity, lung activity or brain activity, i.e., of all higher spheres, which are above the spinal chord level in medulla oblongata. At that moment the body is in the deepest coma. Only the heart beat has continued through the heart's own automation. In such situations there are still signs of death of higher brain centers, and indeed there is no restoring of life. It is then permitted to remove the heart supporting apparatus,

i.e., to start taking organs for their transplantation to another person (which ensures the quality of the organ taken and better chances for its functioning in another body).

It should be pointed out that Islamic jurists claim that death occurs at the moment when the soul leaves the body, i.e., when brain stops obeying the soul, which in this case again coincides with the above stated fact. If the soul indeed is linked to the most advanced part of the brain, then there is no doubt as to whether transplantation has a spiritual aspect or not, as we are speaking about a far lower level, about the modular level. Between the telencephalic and modular levels there are five concious levels, and therefore, as has already been stated, it is the deepest coma, the one that can be claimed to be without the soul.

To confirm stated reliably, a consensus of doctors of various specialities working in a team is required and the full responsibility for this act is theirs.

The concept of "brain death" does not redefine death, it just alters the criteria of the identification of the moment of death. All the body's vital functions are controlled by the brain. Attempts were made in the 1960's to formulate sets of criteria where-by brain function could be considered to have ceased and these were published from the Harvard Medical School in 1968 , and from the University of Minnesota in 1971 The generally accepted basis for determining brain death was presented by the Royal Colleges in the United Kingdom in 1976.

To certify somebody as brain dead **ALL** the following criteria must be present:

(1) There is **clinical reason** for cerebral death e.g., Head injury, brain tumor, subarachnoid haemorrhage.

(2) **Deeply Comatosed** in absence of:
- (i) Hypothermia.
- (ii) Metabolic derangement e.g., electrolytes, blood sugar, acid base.
- (iii) Endocrine disturbance.
- (iv) Depressant or relaxant drugs.

(3) **Apnoea**. There must be **No** respiratory effort for five minutes off the ventilator with a normal carbon-dioxide pressure of 50mm Hg at the end of five minutes. During this time oxygen at the rate of 6 litres /minute must be delivered via a catheter into the trachea.

(4) **Absent Brain stem Reflexes:**
- (i) Pupils fixed and dilated.
- (ii) Absent corneal reflex.
- (iii) No motor response within cranial nerve distribution by any somatic area stimulation.
- (iv) No Gag Reflex.
- (v) **Cold Caloric Test Negative**. 20 ml of ice water injected slowly into the tympanic membrane using a syringe and an infant catheter should not result in **NYSTAGMUS** or any eye movement. Both ears should be tested separately and both eyes observed during each test.

It can be seen that the clinical tests used

determine loss of **BRAIN STEM** function. Loss of brain stem function is followed by CRADIAC ARREST and TOTAL DEATH of all tissue.

Certain confirmatory tests may be recommended. However the need for an Electroencephalogram [EEG] or investigation of cerebral blood flow by any means remains controversial. In the adult setting these tests are not necessary but in very young children where the clinical criteria of brain death may be difficult to elicit, it is recommended that confirmatory laboratory tests be done.

Clinical examination to determine brain death should be repeated at intervals to ensure no improvement in the patient's condition. This is the best safeguard of all. The golden rule in the diagnosis of brain death is- "when in double don't make the diagnosis of brain death". The accuracy rate of these set criteria is 100%. To date, information collected from the international data bank indicate that there has been NO false positive results.

By South African Law, the diagnosis of brain death must be made independently by two doctors registered with the South African Medical and Dental Council. Only one of these doctors need be a senior physician with greater than 5 years registration with the council. Neither the transplant surgeon nor his assistant is allowed to make the initial diagnosis of brain death. They can confirm that the diagnosis is correct only after two competent doctors have made the diagnosis first. Furthermore, any person associated with the subsequent organ transplant is precluded from

making the diagnosis of brain death.

It is important not to confuse the **"VEGETATIVE STATES"** with the diagnosis of **"BRAIN DEATH"**. In the vegetative state damage is to the cerebral cortex with the brain stem function being intact. Such patients are not brain dead and may recover from their neurological disability.

The diagnosis of brain death is useful as it gives an indication to relatives of the accompanying bad prognosis. Equipment is always needed in intensive units and these machines may be used for patients who have a better prognosis than for those who are "brain dead" with no chance of recovery. Even if one continues full resuscitative measures in a patient with brain death the result is cardiac arrest within 24-96 hours. The other benefit of recognizing brain death is that such patients are potential organ donors for transplantation. Organs taken from brain dead patients have a better chance of functioning in the post-operative period.

The criteria used in diagnosis of brain death are accurate provided they are applied in a diligent and enlightened fashion in selected groups of patients.

In Pakistan there are no rules and regulations regarding brain death and organ donation. There are several brain dead patients in our intensive care units, which can be potential source of organs. Legislation should be finalized with the help of doctors, Islamic scholars and lawyers. Council of Islamic Ideology can help in the formation of law for organ donation.

THE HUMAN ORGAN BANKS

Definition of the Possibility of Storing Human Organs (Organ Banks):

For the safest possible transplant of human organ, the existence of banks of human organs is recognized as essential. For this process to meet approval, a number of conditions have to be justified, of which we point out particularly the following:

1) The institution has to have comprehensive and detailed legislation and be under full control of the respective institution which duly have full insight into the activity of the institution.

2) Prior, legally valid consent of both donor and receiver is required.

3) The organ is permitted to be transplanted.

4) Each organ has to have accompanying documentation (who the donor was, under what circumstances the organ was made available, if legal regulations on taking the organ over were met, etc.)

5) Prior to the transplantation, the receiver has to be acquainted from whom he is receiving the organ and in this respect follows his wish.

6) The bank for human organ has to be physically separate, in special premises and with the

appropriate documentation, human organs for transplant should be stored away from possible animal organs, so that their mixing and misusing is by no means possible.

At present times in the world, apart from kidneys, the corneas, hearts, livers, lungs, and pancreases are transplanted. In such situations, the possibility of exchanging organs obtained from donors' will is very useful. In this particular case, in banks having a surplus of some organs but lack of others, the exchange of organs would ease such shortages. The organ exchange may be performed between medical institutions having previously established the same ethical codex concerning the taking and transplanting of human organs and clearly defined rules and standards. Each body part permitted to be transplanted also has to have the required documentation and all relevant information concerning the donor, the way the donated organs are accepted, the possible conditions set by both parties, and all respective requirements of medical institutions. A medical institution under justified suspicion, or proved not to adhere to highly moral standards and principles required in this field, may not by any means engage in any activity concerning organ transplant or human body organs exchange.

Eventually, after all that has been presented, the question has been raised as to the necessity of setting up an Islamic organ bank which would be accepting, storing, transplanting and exchanging organs, adhering to all the principles stated in this paper.

References:

(i) Abul Fadl Mohsin Ebrahim Organ Transplantation: An Islamic Ethicolegal Perspective. PIMA Year Book 2002.

(ii) Bakir Mehic. Organ Transplantation in the light of Sharia'h. PIMA Year Book 2002.

(iii) Abul. Fadl Mohsin Ebrahim, Aref A. Haffeje, Abdullah Mohsin. The Shari'ah and Organ Transplants PIMA publications. 1989.

CONCEPT OF DEATH IN ISLAM AND "END OF LIFE" ISSUES.

Muslims believe in the certainty of death .The Qur'an says:

Every soul will have a taste of death. And only on day of judgement shall you pay your full recompense.
Only he who is saved far from the fire and admitted to the Garden will have attained the object (of life):
For the life of this world is but goods and channels of deception. (Ale-Imran-185).

We also believe that no one, but Allah, knows the exact moment and whereabouts of one's death. The Glorious Qur'an syas:

Not can a soul die except by Allah's leave- the term being fixed as by writing.
If any one desires a reward in this life, We shall give it to him; And if any one desires a reward in the hereafter, We shall give it to him.
And swiftly shall We reward those who serve us with gratitude. (Ale-Imran-145)

The Glorious Qur'an also says:

It is Allah that takes the souls (of men) at death,
And those that die not, (He takes) during

their sleep.
Those on whom He has passed the decree of death, He keeps back (from returning to life), but the rest He sends (to their bodies) for a term appointed.
Verily in this are signs for those who reflect." (Al-zumer-42).

Definition of Death

Muslims believe that death is ordained by Allah.

Say:" It is Allah who gives you life, then gives you death;
Then He will gather you together for the day of judgement about which there is no doubt: But most men do not understand:"
(Al-Jasia-26).

Death marks the end of time when man can change his fate in the Hereafter. The testing period ends then. The Glorious Qur'an states that the unbelievers, once faced with death, realize the truth and want to have the chance to amend their ways. At that point, they cannot. The Glorious Qur'an describes this in the following passage:

"In order that I may work righteousness in the things I neglected"
"By no means! It is but a word he says."
"Before them is a Barzakh (partition) till the

day they are raised up". (Al- Mominoon-100).

While the inevitability of death is made fairly clear in the above verses, the exact definition of the moment of death remains vague. When does one die, when the heart stops beating or when breathing stops or when the brain stops functioning?

In one of the above verses, Allah states that He takes the soul away upon the death of a person.

Where does the soul reside and how do we, as health providers, lawyers, determine that at the bedside? In technologically advanced countries, this becomes a problem since we can, with modern techniques, maintain breathing and heartbeat for long periods.

In the less technologically advanced countries, this dilemma does not exist since most deaths occur in homes, where, in the absence of artificial devices, nature takes its course and death is relatively easy to recognize.

I recall, in 1963 in my home in Kashmir, as a medical student I was asked to evaluate grandma who "did not look good." With my rudimentary clinical skills, I listened for the heartbeat. Hearing none, I put a strip of cotton under grandma's nostril and seeing no movement, declared her dead in the absence of heart sounds and breathing. Grandma was laid to rest. Fast forward to the year 1999, and I, as Chief of medicine, in a busy hospital in New York, would have a much harder time declaring someone dead, who is being ventilated on a machine, is unresponsive, and shows some traces of heartbeat on the attachéd cardiac

monitor.

It was relatively easy for me to declare that the Creator had separated grandma's body from her soul, not so easy in the USA. In simple terms, defining death or the moment of death can be quite challenging.

As a physician caring for critically ill patients in New York, I reviewed the various Islamic definitions of death and concluded that using brain death, which is defined as cortical and brain stem death as a criterion of death in Islam, is quite acceptable.

End – of – life issues:

In approaching potentially controversial issues as end-of-life care, as a Muslim, I take into account as to what is the most appropriate action under the circumstances. While the Shari'ah (Islamic law) protects each individual's life, religion, mind, property and family, the Shari'ah does in difficult cases provide the option of choosing the lesser of the two evils.

It is my firm belief and conviction that, based on the example from Prophet Mohammad's (PBUH) life and the teaching of the Glorious Qur'an, Muslims are encouraged to plan for the Hereafter on a regular basis and preparing for death becomes a central and key element in this. Muslims are encouraged to have wills prepared to ensure appropriate dispensation of belongings after death. The key elements in preparing for end-of-life issues are:

1). Do our best to maintain life.

2). Do not introduce unbearable pain or suffering.

3). Muslims look upon hardships as tests from

Allah. Patience, perseverance, and hope in Allah's mercy prescribed for patient, family and friends, are also better rewarded by Allah.

4). When treatment (scientifically evaluated) is futile and holds no promise, it ceases to be mandatory. However, we still owe the patients, rights of nutrition, hydration, nursing, and relief of pain but NOT extraordinary medical interventions.

Advanced directives: a duly executed document concerning medical care in the absence of the ability to decide:

Yes, advanced directives are permitted, as long as the efforts are sincere and the intentions are to abide by Islamic rules and follow the commands of Allah. Once these guidelines are followed, one is not held responsible for the results. Such directives can resolve serious conflicts and the validity of advanced directive is supported by a Hadith in which Prophet Muhammad (PBUH) told his followers that anyone who knows that a patient does not want a medicine must not force it on him or her. (Bukhari 7:610)

I believe it is morally Islamically acceptable and often an act of love to forgo or withdraw technologies and treatments aimed at prolonging life (ventilation, dialysis, nutrition, hydration) when it offers little reasonable benefit or is an unreasonable burden to the patient.

The person who forgoes heroic measures chooses life without the burden of disproportionate

medical intervention, thereby accepting the inevitability of the dying process and Allah's will.

Suicide and Euthanasia (Mercy Killing).

Islam's position on suicide and euthanasia, whether active or passive, is an emphatic No.

Life is a trust given by Allah. We are not allowed to diminish it, let alone, harm, or destroy it. We can neither shorten nor prolong life.

"And do not with your hands cast yourselves into destruction". (Al-Baqara – 195)

"Nor kill (or destroy) yourselves. For verily God hath been to you most merciful." (Al-Nisa -29)

"And slay not your children for fear of want. We shall provide for them and for you. Verily! their slaying is a great sin." (Bani – Israel-31)

Reference:

Farouque A. Khan Religious Teachings and Reflections on Advanced Directive: Islamic Perspective. PIMA Year Book 2002.

CLONING AND ADVANCES IN MOLECULAR BIOTECHNOLOGY: ISLAMIC SHARIAH GUIDELINES.

(ALY A. MISHAL. M.D., F.A.C.P.)

The success of cloning of the sheep "Dolly" in 1997 heralded a worldwide tremor and controversy among the scientific, legal and ethical communities.

In the Islamic world, the widespread interest in this issue was reflected in many seminars, discussions, commentaries and *Fatwa* rulings (1-4). Several scientific-jurisprudence meetings took place, discussed the issue in details and guidelines were published.

In the non-Muslim world, legislation and regulations were adopted in several countries, ranging from illegalization of research in human cloning, to prohibition of governmental funding of such research.

In the USA, as an example, very shortly after publishing the "Dolly" report, the President of USA instituted a ban of federal funding for human cloning research. He also appointed an advisory commission to address the ethical and legal aspects surrounding human cloning. This commission recommended a ban on federal funding of research on human cloning, and issued an immediate request to investigators and research centers in the private and non-federally funded sectors to comply, and to consider any research aiming to produce a child by somatic cell nuclear transfer as an irresponsible, and unethical act.

Scientific Background.

The bottom line of mammalian cloning is the success of the technology of somatic cell nuclear transfer. The nucleus of a somatic cell is transferred into an enucleated ovum, under specific circumstances. This ovum "fertilized" by a somatic nucleus, acted as an ovum fertilized by a sperm, entered into the cascade of cell division and ended up into a fetus (10 -12).

This scientific breakthrough has since then stirred a worldwide ethical debate in view of its possible application to human cloning. The group of Dr. Ian Wilmut of the Roslin Institute in Scotland, stated their main ambitions, following cloning of "Dolly" to further improve and refine their technology. Out of 277 attempts, only 13 pregnancies were produced, and only one culminated into a live birth: Dolly. Their immediate goals were to produce generations of transgenic animals with specific features to produce important proteins and other medical products in quantities and qualities to combat human illnesses.

Other researchers, however, have not concealed their ambitions and plan to produce human clones! It is now a matter of time when human cloning will be undertaken in many centers. (7,13)

We will present here, the Islamic ethical standpoints on various cloning aspects, as perceived by several scientific-jurisprudence discussions over the past few years.

Cloning in Plants and Animals.

Cloning of plants, animals and other organisms

has been going on for many years, aiming at production af food materials and medical products, in desired quantities and of special qualities.

Although many groups and organizations, especially environmentalists, ethical groups and defendants of natural human food consumption, waged campaigns opposing the use of cloning technologies to produce food materials for human consumption, so far the scientific evidence of any ill-effects of such food materials is lacking .

This issue was addressed in 1997 seminar of the Islamic Organization For Medical Sciences (Kuwait) held in Casablanca, Morocco, a Fatwa was issued by Council of Islamic Jurisprudence in Makkah, and a book was published in Jordan, in September 2000, which discussed this issue in depth (1-3).

We will summarize the Islamic point of view towards various aspects from the above sources (1,14):

The technology of cloning and genetic engineering could be used in plants, animals, bacteria & other organisms to produce benefits & prevent harm to mankind. All such procedures should be conducted within general guidelines approved by Shari'ah standards:

(1). Realization of recognized benefits approved by Shari'ah..

(2). Assurance that purposeless procedures, change of Allah's creation, or aim at production of monstrous creatures (Maskh) will not take place.

(3). The harm from such procedures, should not exceed the benefits.

(4). No torture to the experimented animal be given.

Embryo Cloning

Cloning of embryo has been used in breeding of cattle and sheep since the late 1980. The technique produces monozygotic (identical) twins, triplets, or quadruplets. It duplicates the natural twins, triplets, or quadruplets (15).

Human embryo cloning starts with a standard in vitro fertilization (IVF). The ovum is fertilized by a sperm, then starts the process of division into two then four, then eight cells, and so on,

In the laboratory a chemical is used to dissolve the zona pellucida membrane which covers the group of cells (blastula), then each cell is sparated, coverd by an artificial zona pellucida, and allowed to divide and develop into a fetus.

In the USA, ethical and pro-life groups were able to impose a ban on human embryo cloning until the mid 1990s, when research proceeded, but short of producing a child. A panel was formed by the National Institute of Health, which recommended the following guidelines:

- ✡ Research to be limited to use pre-existing embryos (about 20 fertilized ova).
- ✡ Any studies on these embryos be limited to the first 14 days of conception (prior to formation

of the fetal neural tube).

- ✡ Banning implantation of human embryos in other species, implanting cloned embryos into humans, transfer of a nucleus from one embryo to another, and use of embryos for sex selection.

Some of the Possible Benefits of this Procedure:

- ✡ Greater understanding of causes of miscarriages to prevent spontaneous abortion.
- ✡ Pre-implantation diagnosis of certain genetic disorders in the cases of parents with inheritable genetic defects. One cell is studied, to decide whether the other cell (s) would be safely implanted into the wife.
- ✡ Certain women can only supply one single ovum in the process of IVF, This ovum when fertilized could be cloned into 4 or 8 zygotes to improve chance of pregnancy.

Some Possible Disadvantages of Embryo Cloning are:

- ✡ The procedure could be used for sex selection.
- ✡ The possibility of injuring the cell when the zona pellucida membrane is removed, and cells are separated. At this early and sensitive stage there may be significant ill effects, which casts doubts on the safety of the procedure.

- The problem of identical individuals, and its concomitant psychological, legal and social aspects.

This issue was discussed in the 1997 Casablanca Scientific-Jurisprudence seminar of the Islamic Organization of Medical Science (IOMS) (1), and also addressed in depth in the book (Contemporary Biomedical Issues in the light of Islamic Shari'ah) published in September 2000 by the Society of Islamic Medical Studies in Jordan (16). In both of these activities, the scientific bases of the issue were fully outlined to the Jurisprudence scholars to enable them to formulate Shari'ah opinion.

In both seminars, it was concluded that human embryo cloning in principle, is not different from in vitro fertilization, which was approved, within certain Shari'ah guidelines in past "Fatwa" (legal opinion) rulings.

The complete evaluation of this procedure, however, is not available yet. The above mentioned advantages and disadvantages, their benefits and harms are not clearly and confidently known till now. Some of the main concerns are:

- The procedure, although similar to IVF, in certain aspects, has some features of human cloning. It produces identical twins, with the possible concomitant psychological and medical problems including lack of genetic variability and concentration of genetic disorders.
- In case a large number of cells are fertilized a

surplus member of embryos may result, with possibilities of improper use, commercialism and mixing of lineages.

The following points summarize the standpoint as perceived by jurists in these two seminars.

(i). Separation of cells of the fertilized ovum in the IVF lab. is permissible, if it aims at treatment of infertility during marriage, without any interference of any third party on the husband-wife relationship. It is governed by the same Shari'ah standard as that of in vitro fertilization (IVF).

(ii). Maintaining and freezing of such ova (surplus) in special banks, for future use within the bondage of marriage, received no unanimous approval. The majority of participating scholars approved it provided the following arrangements are guaranteed:

(1). Such banks should be operated by central, non-profit, reliable authorities, and managed by reliable, committed Muslim medical workers, who adopt a system of perfect documentation and responsibility, to guard against commercialism and mixing of lineages.

(2). Governments should issue and adopt rules, regulations and legislation to supervise such banks, and to impose prohibiting punishments for deviators.

Adult Human Cloning (Adult Human DNA Cloning)

Or Somatic Cell Nuclear Transfer in Humans.

The technology of somatic cell nuclear transfer, which produced "Dolly" in 1997, subsequently produced many other mammals in several research centers in North America, Europe and Japan. Since then human cloning research has been undertaken in several centers (7). Despite governmental and ethical groups limitation and objections, some researchers did not conceal their plans to attempt human cloning.

Richard Seed of Illinois-USA announced that his clinic was very close to attempt cloning of human being (13). As of August 2001, there were two publicized projects attempting human cloning. Other centers announced that research successfully produced human clones, but admitted this will be used only to generate stem cells for research. In Europe, a group of scientists expected the possibility of human cloning by 2003.

Opposition to human cloning research began soon after the birth of "Dolly" in 1997 (7,8).

In June 1997 and 1999 the Southern Baptists Annual Conventions passed resolutions supporting a U.S. governmental ban on funding human cloning & asked that such cloning be prohibited.

In August 2000 Pope issued a ban on human cloning.

In July 2001, in USA the House of Representatives approved a bill to ban all human

cloning, and another bill to levy a 10 years jail sentence and one million-dollar fine for anyone who clones a human embryo. Surprisingly, some researchers seem not to be deterred by these measures, or by the reported high mortality, deformities and other genetic disorders in animal cloning, and human cloning research is going on overtly and covertly.

In the Islamic world, every Islamic seminar, *Fatwa* council or individual scholars have considered cloning procedures aiming at producing human clones as not permissible. The majority of scholars considered it *Haram* (forbidden) in all its details (on its own features). Others considered it *Haram* as a way to prevent a cause of *haram*, an opinion keeping possible exception to be entertained in the future, in case new information about benefits become more clear and approved by Shari'ah. Such exceptions, when and if they arise, should be discussed as case to case in light of the Shari'ah.

There was discussion of the case of using nuclear transfer technology between the husband and wife.

Even this issue was not approved on the same basis mentioned below.

All scholars unanimously approved the prohibition of introducing any third party upon the marriage relationship, whether this party is a womb, ovum, sperm, or somatic cell for cloning (1,14).

The Basis for Prohibition *(Tahreem).*

1- The basic concept in reproduction is abidance

by the Sari'ah approved system of legally binding marriage, through the union of sperm and ovum.

2- Human cloning is against the natural process (Fitrah) of human relationship of marriage and reproduction.

3- The major harms far exceeding any benefits. Such harms include disturbance and impurity of lineage, family relations, social structure, and disruption of many Shariah's principles dependent on lineage. There is major difficulty in classifying the "cloned" person, as a son (or daughter) or identical twin of the person from whom the somatic nucleus was derived.

4- The issues of identical features of the clones, and its social, moral, psychological and legal implications.

5- The problem of safety: There is no guarantee that cloned humans will be normal, either shortly after birth, or later in life. In cloned animals mortality, deformities and genetic disorders and premature aging were reported. There is no reason to assume that such problems will not take place in human clones. Another safety concern is the likelihood of concentration, and proliferation of certain genetic illnesses, mutations etc, which are expected from lack of neutralization of lethal

genes as a result of human cloning. It is known that natural union of ovum-sperm neutralizes or abolishes many lethal genes.

6- The likelihood of disturbance of the time-honored balance between males and females, when left to the wishes of people.

Therapeutic Cloning.

Cloning technology has been used, or has potential use, in therapy or prevention of human disease. We will review here the main therapeutic uses of this technology as reported or discussed so far.

I. Production of Therapeutic Substances.

Human genetic material could be introduced into animals, bacteria or other organisms, aiming at production of therapeutic proteins, hormones, vaccines... etc. to treat or prevent human diseases. Over the past 2 decades, medications such as human insulin, growth hormone, clotting factors, vaccines and other medical substances were produced by this technology. Transgenic animals were produced by introducing the desired human genetic material into ova of cattle, sheep or other animals. These ova will produce animals which produce milk containing the desired medical material in sufficient quantities to combat human diseases.

This issue was discussed in the scientific-jurisprudence in Jordan, and the following conclusions were obtained (17):

- ✡ It is permissible to use cloning technology to introduce human genetic material into bacteria or animals ova aiming at production of medical materials necessary to treat or prevent human diseases.
- ✡ This technology should not be used for any purpose not approved by Shariah, e.g., to change the shape of the animal or to produce monstrous or disfigured animals *(Maskh)*.

II. Gene Therapy

Technology to introduce new genetic material into mammalian cells has been underway for years. The aim is to introduce, a functional (healthy) gene to replace or supplement, the activity of a deficient gene. Two types of technologies have been applied (18-21):

1. Germ-line technology:

Whereby a foreign DNA is introduced into the zygote or early embryo, hoping the new DNA will enter into the germ line of the recipient and then passed on to its next generation. Research has been developed mainly in transgenic mice, but proved to be inefficient! Only 15-20% expressed the introduced gene. Significant risks were noted, especially damage to resident genes (insertional mutations) by the random insertion of the foreign DNA. This technique is still inapplicable to humans.

2. Somatic cell gene therapy:

The new (healthy) genetic material is introduced into somatic cells, and thus will not be transmitted to the germ cells. Trials for human genetic diseases have been underway for years. The new DNA is introduced by vectors (viral or nonviral) such as liposomes and others. The technique was applied ex vivo and in vivo. Both techniques, although very promising, still produce several drawbacks, and insertional mutations of resident genes are still encountered. Genetic disorders that could be treated by this technology include hemoglobinopathies, hemophilia, cystic fibrosis, AIDS and others. This technology must be looked upon as early and in need of significant improvement.

This issue was a subject of detailed discussion in the Scientific-Jurisprudence seminars held in Jordan, by the Society of Islamic Medical Studies. The following guidelines were approved (22).

- ✡ It is permissible to use cloning technology and genetic engineering to produce and introduce human genetic material into a human being, aiming at curing illnesses provided that Shari,ah guidelines are not violated, and among these is the rule of "no harm". Such procedures should reach a level of perfection whereby they significantly produce more benefit than harm.

✡ The same technology could be used to introduce healthy genetic material into ova, fertilized ova, or fetuses, aiming at prevention or curing disease, provided that:

1. The rule of 'no harm' is applied.

2. The technology is not used to interfere with the general (non-pathological) human characteristics, e.g., color of skin, eyes etc. or to change the composition of the heritable characters of the cells.

III. Preimplantation Diagnosis.

Major developments took place in the area of prenatal diagnosis of genetic disease over the past decade. DNA mapping, Polymerase Chain Reaction (PCR) and other technologies were instrumental in elucidation of genetic disorders (23).

Congenital or inherited disorders could be diagnosed at the early embryonic satge (morulla).

Progress in IVF procedures and technologies made it possible to identify disorders prior to transferring fertilized ova to mother's uterus, and enabled practitioners to take proper decisions accordingly.

Prenatal diagnosis requires adequate and accurate information about inherited disorders by proper counseling and detailed family history.

DNA probes were successfully prepared and enabled us to identify abnormal genes, which laid the

grounds for gene mapping, and characterization of specific genetic disorders.

Methods of prenatal diagnosis of genetic disorders:

1. **Polar body biopsy:** Polar bodies are attached to ova prior to fertilization in the fallopian tube. In IVF procedure, the polar body can be removed and studied. The findings are representation of ova.

2. **Cells separated from fertilized ova in IVF lab:** One or more cells can be removed from the 8 or 16 cell morula, and studied within few hours prior to transferring the fertilized ovum to mother's uterus. At this stage, genetic disorders could be identified, and decision could be made as to whether to transfer the preembryo to uterus or not.

DNA is currently studied by techniques of PCR, FISH, and others. Such investigations enabled practitioners to make prenatal diagnosis of genetic disorders, and may help tremendously to avoid a diagnosis later on during gestation, with its concomitant ethical and physical consequences i.e., a decision to terminate the pregnancy. Some of the disorders diagnosed over the past several years are:-

Cystic Fibrosis, Thalassemia, Hemophilia, Muscular Dystrophy, Sickle Cell Disease, Retinitis Pigmentosa... etc. Following the major breakthroughs in gene mapping and the Human Genome Project, it is expected that the scope of identification of genetic disorders will widen tremendously.

These issues were subject to several scientific-Islamic jurisprudence discussions and publications. The last was a series of seminars held at the Islamic Hospital in Amman-Jordan, by the Jordan Society of Islamic Medical Studies.

The following are the main Shari'ah guidelines adopted (23).

1. Scientific Research: including testing to diagnose genetic disorders, is allowed on sperms, and ova. Islamic ethical standards must be observed through Ethical Committees in which medical experts and Muslim scholars participate. Such standards include prohibition of use for unapproved fertilization. Obtaining ova for such research should have ethically approved purpose, in a subject with significant personal or family history of fetal disorders (recurrent abortions, fetal malformations, specific genetic disorders.... etc.) The practicing medical team should weigh the hazards and frequency of fetal disorders, against the hazards of the procedure to establish prenatal diagnosis.

2. Fertilized ova in the IVF lab:

   - ✡ The ova do not acquire consideration as human fetuses, unless restored to the mother's uterus.
   - ✡ Experimentation on them is permissible

to diagnose genetic disorders, within the above mentioned Shari'ah guideline.

- ✡ This includes surplus fertilized ova in IVF lab.
- ✡ Practitioners are allowed to avoid restoring to the uterus, any fertilized ova, if they realize that such ova carry certain genetic disorders.

3. Administration of specific genetic materials to the fertilized ovum, with the aim of substitution of abnormal genes by normal ones, to prevent development of genetic disorders, is permissible, provided no interference is undertaken in the other genetic composition, including the usual, non pathologic features, such as color of eyes, height, color of skin ...etc.

4. Experiments on fertilized ova in the lab, to recognize the sex of fetus is allowed, and can be used to determine whether to restore a fetus of certain sex if that significantly predisposes it to have certain heritable disorders.

5. Experimentation on fertilized ova in the lab, with the purpose of choosing certain fetal sex: The consensus was that it is not permissible.

In all these prenatal procedures, two main principles must be met:

a. A recognized ethical committee of experts and Muslim scholars should be functional in every institution that undertakes such procedures.

b. The informed consent of parents is a basic condition in all these procedures.

IV. Organ Transplantation and Stem Cell Technology.

In view of the increasing need for organ transplantation, the growing lack of organs when needed to save human life and health, and the dilemmas of organ rejection ...Research has been progressing to provide ample and non-rejectable organs. Human genetic material was introduced into ova or embryos of certain animals, aiming at production of transgenic animals with organs less likely to be rejected when transplanted into needy humans.

This issue was discussed in one of the seminars held by the Jordan Society of Islamic Medical Studies, and the following guidelines were approved and published (25):

It is permissible to use cloning technology and genetic engineering to introduce human genetic material into ova or embryos of animals, aiming at production of animals with organs suitable for transplantation in humans, to save or preserve human life. Such approval was made according to the Shari'ah "Rule of Necessity", and is dependent on the Shari'ah

guidelines of organ transplantation in general.

The issue of using cloning technology in the area of primitive embryonic cells, and stem cells, was discussed and the following scientific and Shari'ah overview was published (26).

Stem Cells: Controversies and Ethical Issues.

Stem cell research is currently the center of raging battle between promoters in the scientific communities and opponents in the human rights and ethical societies. It is worthy to enlighten Muslim medical professionals on this evolving issue, its scientific basis, clinical and ethical implications.

Stem cells are primitive, multi-potent cells, capable of self-renewal. They possess a sheer power of differentiation and growth, which is the essence of life itself.

When given the right promoting factors and environment, they can differentiate into various cells: neural, muscular, dermal, erythropoietic, insulin producing cells, and others.

They also have other research and clinical application, such as study of gene expression during development, and as a source for drug and toxicity testing on various cells.

Two types of stem cells were subjects of extensive research: Embryonic stem cells (ES), and adult stem cells.

Recent stem cell based modalities of therapy have produced real successes in various diseases in

animal models, such as insulin dependent diabetes mellitus, Parkinson's and Alzheimers diseases.

ES cell were first isolated from the inner cell mass of developing mouse blastocysts. They were capable of developing to every cell type of the body. This was considered one of the great breakthroughs in cell biology research.

Human ES cells have the same capacity. Currently there are about 60 lines of such stem cells stored in research centers in the US, and were subject of hot debate. Recently The US President addressed his nation declaring his approval to provide federal grants towards research on these 60 stored human stem cell lines. But opponents are still raising strong ethical objection. Seventy members of the Congress signed a statement of objection to the use of human ES cells in research, considering that as unethical disregard of this early stage of human life.

Adult stem cells entered biological research more recently. They are pluripotent stem cells that possess features similar to those of ES cells. Among the various human stem cells, hematopoietic stem cells became most extensively researched and understood. Not only they were used for hematologic disorders, but such stem cells have the capacity to transform into other cell lines, if given the right set of signals and circumstances.

Adult stem cells were derived from the marrow, and placental cord blood. They have been shown to transform into endothelial vascular cells, muscle, hepatocytes…etc. One can imagine their possible uses to treat a wide variety of human illnesses.

Contrary to previous thinking, , it was established that adult organ-specific stem cells may be capable of differentiating into other cells and may produce other organs.

Several features of adult stem cells make them a better choice than ES or fetal cells. One of these advantages in the use of one's own stem cells for treatment, which could avoid adverse immune responses and rejection. Another advantage is the avoidance of ethical implications of using fetal or ES cells.

One of the major hurdles facing this research is the dilemma of lineage commitment pathways of cell differentiation. The specific factors and environments which determine the transformation of the primitive stem cell into certain specific tissue lines are still in their early infancy and may need years of diligent work to elucidate the Creator's treasures of these factors!

If this occurs, many medical dilemmas may find cure. Stem cells also could be used to build artificial tissues for various organ transplantation. Many human ailments may be effectively eliminated!

From the Islamic ethical standpoint, we know of at least one medical-Jurisprudence organized discussion conducted in Jordan, by the Jordan Society of Islamic Medical Studies (member of FIMA) in collaboration with Islamic Shari'ah scholars. The following standpoints were adopted, and published in a book in September 2000:

1. Culture of human cell lines in the laboratory

and experimentation on them for the purpose of organ transplantation to save human life is permissible.

2. Scientists may use human cells derived form aborted fetuses, deemed not to be viable, or from tissues removed during the courses of surgical operation to cure diseases, as sources for cells to be used for research aiming at organ transplantation.

3. It is not permissible to induce fertilization of human sperm and ova, in any way or form, with the purpose of using the fertilized ova for research.

4. Finally, governments should issue sound standards, and laws to regulate such procedures.

References:

1. An Islamic perspective on some contemporary medical Issues: Cloning. Published in 1999 (Arabic): The Islamic Organization For Medical Sciences (Kuwait) pages :503-515.

2. Contemporary Biomedical Issues in light of Islamic Shariah – Volume II-September 2000. Published by the Society of Islamic Medical Studies in Jordan (Arabic).

3. Proceedings and Rulings of the Council of Islamic Jurisprudence (FIQH) –Makkah –June –

July 1997.

4. Ahmad A. J. Dolly: Paradigm and Paradox J. Islam Med Assm 1997;29: 87 -89.

5. Stephenson J, Threatened Bans on Human Cloning Research could Hamper Advances. JAMA, April 2, 1997. Vol. 277, No. 13.

6. Underwood A. Today the Sheep Tomorrow the Shepherd? Newsweek, March 10, 1997.

7. Human Cloning: Recent developments – 1997 to the present time http:// www. religioustolerance.org / Clo_rece. htm.

8. Adult DNA Cloning topics http // www. religioustolerance. org/ Clo_intra htm.

9. Pannel calls for ban on human cloning http:// cnn. com /TECH / 9706 /07 /cloning. ap/index. html.

10. Campbell KH, McWhir J, Ritchic WA, Wilmut I: Sheep cloned by nuclear transfer from a cultured cell line. Nature 1996; 380: 64-6.

11. Solter D. Lambing by nuclear transfer Nature. Vol. 380,7 March 1996.

12. Wilmut I. Schincke AE. McWhir J. Kind A.& Campbell K. Viable offspring derived from fetal and adult mammalians cells Nature 1997; 385: 810- 3.

13. Human Cloning: USA Today Jan. 9-11 1998

First page.

14. Source #2, page 156- 158.
15. Ethical aspects of human colning: What is embryo cloning? Http: // www. religioustolerance. org / clo_intra.htm.
16. Source #2, page 173.
17. Source #2, page 268.
18. Beuzardy. Towards gene therapy of hemoglobinopahties Semin –Hematol. 1996 Jan; 33 (1): 43 – 52.
19. Rund D, Rachmilewitz E: Thalassemia major: Older patients, new therapies Blood Rev. 1995 Mar; 9 (1): 25 – 32.
20. Crystal RG: Transfer of genes to humans: Early lessons and obstacles to success. Science 270: 404, 1993.
21. Harrison's Principles of Internal Medicine. 14th Edition 1998 Mc Graw-Hill Pages 403 -409.
22. Source #2, page 269 -270.
23. Delhanty J, and Harper J. Genetic diagnosis before implantation BMJ vol. 315; 4 Oct. 1997.
24. Source #2, page 269.
25. Source #2, page 270 -271
26. Mishal A. Stem Cells: Controversies and Ethical Issues: Jordan Medical Journal – May 2001; 35(1), pp:80-82.

MEDICO – LEGAL ISSUES IN PATIENT CARE

Informed Consent

Valid consent must be voluntary, informed, and by a person with capacity to consent. It involves explaining the procedure contemplated, making sure the patient understands, and offering the patient a choice. Consent is limited to what was explained to the patient except in an emergency. It is not a single event but a continuing process. Refusal to consent must be an informed refusal (patient understands what he is doing). Refusal to consent by a competent adult even if irrational is conclusive. Treatment can only be given by permission of the court. Doubts about consent are resolved in favor of preserving life. The right to refuse life-saving treatment is not an absolute right and is balanced by the state's interest in human life.

Competent children can consent to treatment but cannot refuse treatment. The consent of one parent is sufficient if the 2 disagree. Parental choice takes precedence over the child's choice. Courts can overrule parents. Lifesaving treatment of minors is given even if parents refuse. Parental choice is final in therapeutic or non-therapeutic research on children. Spouses and family members do not have and automatic right to consent. A spouse cannot overrule the patient's choice. Mental patients cannot consent to treatment, research, or sterilization because of their

intellectual incompetence. They are admitted, detained, and treated voluntarily or involuntarily for their own benefit, in emergencies, for purposes of assessment, if they are a danger to themselves, or on a court order. Suicidal patients tend to refuse treatment because they want to die.

Advance directives, proxy informed consent by the family are made for the unconscious terminal patient on withholding or withdrawal of treatment. Physician assisted suicide, active euthanasia, and voluntary euthanasia are illegal. A "do not resuscitate order" (DNR) by a physician could create legal complications. Nutrition, hydration, and treatment can be withdrawn in a persistent vegetative state since the chance of recovery is low. There is no moral difference between withholding and withdrawing futile treatment. Labor and delivery are emergencies that require immediate decisions but the woman may not be competent and proxies are used. Forced medical intervention and Ceserian section may be ordered in the fetal interest. Birth plans given to the patient before hand can be treated as an advance directive.

Informed consent is still required for physicians in special practices such as a ship's doctor, prison doctor, doctors in armed forces. Police surgeons may have to carry out examinations on suspects without informed consent. The living will has the following advantage: (a) reassuring the patient that terminal care will be carried out as he or she desires (b) provide guidance and legal protection and thus relieve the physicians of the burden of decision making and legal liabilities (c) relieve the family of the mental stress

involved in making decisions about terminal care. The disadvantage of a living will is that it may not anticipate all developments of the future thus limiting the options available to the physicians and the family. The device of the power of attorney can be used instead of the living will or advance directive. Decision by a proxy can work in two ways: (a) decide what the patient would have decided if able (b) decide in the best interests of the patient.

Legal issues of special types of patients

Child abuse: The state is a protector of children and it can intervene to provide care if parents neglect their duty. Obligatory vaccination is in the public interest and overrides individual freedoms and choice. Children are often victims of abuse, **physical** and **psychological.** The **battered child syndrome** in one of the manifestations of child abuse. The physician is liable for neglecting to report child abuse. **Domestic** violence in defined as physical violence, coercion, threats, intimidation, isolation, emotional abuse, sexual abuse, and economic abuse. Victims of domestic violence can get protection. Violation of the protection order is a crime. **Geriatric patients** or elders can be mistreated by abuse, neglect, or exploitation either at home or in institutions. Elders because of dementia cannot give consent for research and a proxy has to be used. **Brain injured** patient can be abused. Disability evaluation of impaired and disabled patients has both physical and psychological dimensions. The common litigation problems with **oncology patients** arise from misdiagnosis or late diagnosis, excessive radiation, and

mutagenesis and teratogenesis due to chemotherapy, inadequate pain management, and unorthodox cancer treatments. Issues for **HIV patients** include discrimination at work, confidentiality of test results, mandatory testing for the pregnant and the newborns, and restrictions on the practice of HIV +ve health workers. Litigation in the occupational setting may arise due to failure to enforce **OSHA** standards, failure to keep the workers informed, access to employee records, discrimination in the workplace (gender, pregnancy, fetal protection), worker's compensation and legal liability of occupational exposure.

Reference:

Omar Hasan Kasule, Sr. Physician Etiquette. Islamic Input in Medical Knowledge. Kampong Bara Medical Centre, Kuala Lumpur.

ANATOMICAL DISSECTION OF CADAVERS & POSTMORTEM EXAMINATION

Anatomical dissection of cadavers, for teaching purpose is being practiced in most of the teaching medical schools all over the world. In this process the human bodies are subjected to seriel cutting of their tissues, exposure of blood vessels and nerves, removal of body organs one by one and their further dissection into pieces to examine the minor structures. The body is lying on the dissection table for weeks and months and every day some of the flesh is removed and disposed off in the garbage till it is reduced to bones.

From Islamic shariah Point of view this whole process amounts to the worst type of mutilation (maskh), which is forbidden in Islam. Quran says.

"We have honored the progeny of adam" (Al-Israa-70) According to a Hadith of prophet (PBUH) *The cutting of bone of a dead person is like cutting it in a living person.* Similarly in a Hadith narrated by "Muslim" and "*Bukhari*" the prophet (PBUH) has ordered that *"you should hurry up in burying your dead persons."* It is also mandatory in Islam to offer "Janaza" prayer and du`a for the deceased. The unfortunate dead bodies undergoing dissection in the Anatomy hall are deprived of all these privileges only because they belong to poor community, have no heirs and are therefore declared as un-claimed. None of us will like that his body after death and "janaza" prayers

is sent to the dissection hall instead of being buried respectfully in the religious way. Similarly nobody would like that the dead body of his father, mother or any other close relative is consumed to meet the requirement of "Service to Humanity". It is said that "Necessity overrides Prohibition." If dissecting dead bodies is really a necessity then who will volunteer himself to fulfill this necessity. If we do not like something for ourselves how can we like it for others?

Today in this advanced age of progress in "Information Technology", a very important consideration would be to completely forgo with the practice of Anatomical Dissection for teaching purpose. With advanced technology, computer-graphics, and technique of fabrication of models, the entire human body can be replicated with minor details and used in the teaching of human anatomy. With all these modern technologies available today there is no justification at all to subject the sacred human dead bodies to mutilation.

Regarding postmortem examination on dead bodies it is recommended that in all medico-legal cases relating to death of an individual a committee of doctors and jurists should examine the dead body and other evidence relating to the cause of death and if the cause of death is obvious no postmortem examination should be carried out. Postmortem examination should be carried out only in those where it is difficult or doubtful to ascertain the cause of death and it is necessary to find the cause of death to meet the legal requirement.

(MAQBOOL AHMAD SHAHID)

WHAT IS PIMA?

Mission:

The mission of PIMA shall be the achievement of Allah's pleasure through selfless service and building human society on the principles taught by Allah and His Messenger.

Aims & Objectives:

The following shall be the aims and objectives of the Pakistan Islamic Medical Association:

1. To motivate doctors to meet the practical requirements of Islam and organize on one platform those who agree to the mission of this organization.
2. To exploit as doctors the opportunities of mass contact for the spread of Islam.
3. To make effective arrangements for ideological, moral and professional training of doctors belonging to this organization.
4. To setup professional medical organizations on correct and constructive lines and make efforts to solve in a positive way the genuine problems of the people in the medical profession.
5. To establish on Islamic lines an effective health policy and medical education in the country.
6. To formulate plans for the execution of charitable work concerning medical profession and through them disseminate among masses the message of Islam.

THE OATH OF A MUSLIM DOCTOR

Praise be to Allah, the Teacher, the Unique, Majesty of the heavens, the Exalted, the Glorious, Glory be to Him, Eternal Being Who created the Universe and all the creatures within, and the only Being Who containeth the infinity and the eternity. We serve no other god besides Thee and regard idolatry an abominable injustice.

Give us the strength to be truthful, honest, modest, merciful and objective.

Give us the fortitude to admit our mistakes, to amend our ways and to forgive the wrongs of others.

Give us the wisdom to comfort and counsel all towards peace and harmony.

Give us the understanding that ours is a profession sacred that deals with your most precious gifts of life and intellect.

Therefore, make us worthy of this favoured status with honour, dignity and piety so that we may devote our lives in serving mankind, poor or rich, literate or illiterate, Muslim or non-Muslim, black or white with patience and tolerance, with virtue and reverence, with knowledge, and vigilance, with Thy love in our hearts and compassion for Thy servants, Thy most precious creation.

Hereby we take this oath in Thy name, the Creator of all heavens and the earth and follow Thy counsel as Thou has revealed to Prophet Muhammad (PBUH).

"Whoever killeth a human being, not in lieu of another human being, nor beacause of mischief on earth, it is as if he hath killed all mankind. And if he saveth a human life. he hath saved the life of all mankind"(Quran V35)