

Some Bioethical Issues in Jain Perspective

Narayan Lal Kachhara, Ph.D.¹ and Indra Lal Jain, Dr.²

Abstract

Advances in biology and medicine have raised issues of new types of ethics and has forced various religions to express their views on these developments. These developments are being introduced with the aim of passing the benefits of scientific advancements for the well being of humans and other living beings. Study of these biological and medical advancements from moral point of view has given rise to the new discipline of bioethics. Bioethics today is concerned with life sciences, biotechnology, medicine, politics, law and philosophy.

Some of the important recent biological and medical practices are abortion, euthanasia, cloning, artificial insemination and infertility, blood transfusion, body modification, human enhancement, contraception and population control, life extension, organ donation and organ transplant, surrogacy, etc. No Jain scholar or religious leader is known to have expressed views on these practices in scientific community.

The principle of non violence forms the foundation of Jain religion. The life in Jain philosophy is characterized by *jīva* (soul) or atman which is non-corporeal and eternal and cannot be destroyed by any means. The worldly soul is embodied and occupies the body (gross) according to his karma. The body is supported by vital powers in the form of *prāṇa* in its existence. Killing in Jainism is defined as depriving the body of *prāṇa*, *prāṇātīpāta*, so that the material body is no longer sustained and death occurs. There are ten *prāṇas* which exist in two forms one as power of the soul, *bhāvaprāṇa*, and the other as vital powers, *dravyaprāṇa*. Depriving the body of one or more *pranas* constitutes violence and is highly condemned in Jainism. Jainism commands its followers to refrain from violent practices one of which is also in the form of stealing. All these principles, among others, help us to study the ethical issues related to the practices mentioned above.

In this article we attempt to critically examine the ethics of the said biological and medical practices in the perspective of Jain principles. The study is believed to help clarify the Jain position on these issues.

1. Jain Concepts

We review here some Jain concepts that are relevant to the bioethical issues being dealt with in this article.

Life and Death

Life in Jainism is a combination of soul and working body. Soul is non-corporeal and eternal sentient substance that cannot be destroyed by any means what so ever. The soul undergoes transformation in its state due to interactions between its component features present in the impure worldly existence but it never dies. The concept of death is therefore related to the state of the body. The soul and body are connected through the subtle *karmic* body which is always attached to the soul till the soul is liberated. The soul and body continuously interact

¹ Emeritus Professor, JVBI, Ladnun, Formerly Principal MNR Engineering College, Allahabad,

² Senior Physician and Cardiologist, St. Teresa's Hospital, Udaipur

through karma body and any change in one causes corresponding change in the other unless the soul isolates itself from the body, a condition reached only in very advanced spiritual souls. So for all practical purposes the soul and body are supposed to mutually influence each other.

The body made up of matter (*pudgala*) is kept in working condition by *prāṇa*, vital powers. If vital powers were absent the body although properly constructed from biological point of view will not work, it would be dead. So death is defined as departure of *prāṇa* from the body. This happens when the body is cut, mutilated, damaged or altered in any manner so that vital powers are rendered ineffective by their annihilation. At this stage the soul leaves the body i.e. the union of soul and body is terminated and the soul takes rebirth in a new body according to the doctrine of karma. The duration of association of soul and body called life span is determined by life span determining karma.

Vital Powers

Vital powers are subtle forces that are essential for functioning of the body and its parts and to sustain life. There are ten *prāṇas* [1,2].

1. *Ayusya* (age) *prāṇa*- power to keep the body alive for predetermined time-units; when it terminates, death occurs.
2. *Śvāsocchvāsa* (respiration) *prāṇa*- this power enables the body to breathe and is essential for survival.
3. *Śarīra* (body) *balaprāṇa*- this power provides energy to the body to maintain its form
4. *Vacana* (speech) *bala* or *bhāṣābalaprāṇa*- it supports ability of vocal expression, both articulate and inarticulate.
5. *Manah* (Mind) *balaprana*- supports functions of the mind
6. 6 to 10 *Indriya* (sense organ) *prāṇa*- is the power behind the functioning of the five sense organs.

These are physical vital powers (*dravya prāṇa*) possessed by all mundane souls. The eternal existence, consciousness, bliss and intuition are the metaphysical vital powers (*bhāva prāṇa*). These are the real powers without which there is no existence of the soul. Mundane souls possess physical vital powers and metaphysical vital powers in impure state. Without these *prāṇas* the senses will be inoperative, mind, speech and body systems shall not work, the breathing shall stop and the organism shall be dead.

Biopotentials

Life begins from the time of conception by the mother. Conception is supposed to take place when the egg is fertilized by sperms and the zygote is formed. The soul is supposed to enter the zygote after which new life begins and embryo is formed. This new life having a soul different from the soul the mother has different karmic body that now governs the growth of the embryo, the fetus and later the child. In order the soul integrates with the new body two important processes occur. One is establishment of biopotentials in the zygote and the other is infusing *prana* in it. These two important concepts are unique to Jainism and form the basis of life. Both these processes take place simultaneously and involve transfer of information from the *karman* body to the zygote so that the zygote is now ready to develop the new body step by step. Biopotential is supposed to provide the organizational powers and the *prana* the energy and vital powers for formation of body and its components leading to holistic structure in a predetermined and systematic way. There are six biopotentials, known as *pariyapti*, related to different systems of the body [3,4]

1. Food biopotential. Food biopotential is the power for soul so that the body receives food, converts this food into appropriate constituents like solids and fluids, and discharge the

residue. This potential power is used in building the physical body, fluid body (*vaikriya sarira*) and migratory body (*āhāraka śarīra*).

2. Body biopotential. Body biopotential is the power to use the fluid and solids for making the body components. The fluids make seven elements like liquid components, blood, flesh, fat, marrow, and sperm / egg. The solids make bones and other stronger components.
3. Sense organ biopotential. This biopotential is used to form the sense organs from the seven fluid elements.
4. Respiration biopotential. This biopotential assists in making the respiratory system.
5. Speech biopotential. This biopotential develops the system for speech production and transmission.
6. Mind biopotential. This biopotential enables receipt of subtle matter for making the mind (i.e. *mano vargaṇā* and perhaps also *tejas vargaṇā*) and rejecting the useless subtle matter. This biopotential is necessary for power of thinking, imagining and analysis.

All bio potential powers manifest simultaneously, that is, all powers work in parallel. The process is fast and the manifestation is completed in less than one Indian hour. However, the time of completion of each power is different. The food bio potential is completed in the first instant and the fertilized cell produced by union of sperm and egg cells becomes the body of the soul. A soul who manifests all the six powers completely is called fully developed (*paryapta*). Otherwise the soul remains undeveloped (*aparyāpta*).

The vital powers are the fundamental basis of life. The vital powers and biopotentials have the cause and effect relationship. Without vital powers the biopotential powers cannot manifest. Vital powers in sufficient measure are needed for full manifestation of biopotential powers. Soul lacking in vital powers cannot manifest all biopotential powers and remains undeveloped. All the body processes like nourishment of various kinds, and others, mind processes etc. are accomplished with the help of both the vital powers and biopotential powers. Vital powers remain ineffective in the absence of bio potential powers. Thus both kinds of powers are essential to soul.

Violence

Non-violence is the core principle of Jainism. Here violence is defined very minutely; it is not just killing in the normal sense. In general unfavourable transformation of the soul, implying hurting of feelings, constitutes violence [5]. In particular depriving a living being of vital powers, one or more, by passion full actions is definitely violence. An organism is dead when all vital powers are annihilated. The rise of feelings of passions in a person is violence and their non-rise is non-violence. However there are some exceptions. In the case where the vital powers are destroyed unintentionally and without the feelings of passions, such as in case of surgery carried out with good intentions, no violence is committed. On the other hand a careless person working with passions and inflicting pain on others commits violence even if vital powers are not destroyed. In Jainism committing suicide under the influence of passion is violence even when no one else is killed. The very thought of inflicting pain on self or others is violence even without killing. A person who conspires for harming or killing others shall have the consequences of violence even without killing anyone. On the other hand a knowledgeable person with clean heart, like surgeon, does not face the consequences of violence even if harm or killing occurs by chance.

2. Some Bioethical Issues

We now discuss some bioethical issues in Jain perspective. The subject is introduced first and then Jain view is given in each case.

2.1 Abortion

Abortion, or induced abortion and not miscarriage, here means the termination of pregnancy by removal or expulsion from the uterus of a foetus or embryo purposely prior to viability [6]. This procedure may be unsafe. An estimated 44 million abortions are performed globally each year, some in accordance with local law in developed world, with slightly under half of those performed unsafely. Unsafe abortions result in approximately 70 thousand maternal deaths and 5 million disabilities per year globally.

Abortion in Jainism is equated to killing of the foetus or embryo and is not approved in normal case. But if the foetus is dead in the womb due to some reason abortion may be permitted to save the life of the mother.

2.2 Infertility and Artificial Conception

Infertility refers to biological inability of a person to contribute to conception or the state of a woman to carry a pregnancy to full term. Infertility in a couple can be with the woman or the man. A common method of conception in such cases now is assisted reproductive technology (ART) such as in vitro fertilization (IVF). IVF is a process by which an egg is fertilized by sperm outside the body in a laboratory [7]. Once an embryo or embryos form, they are placed in the uterus. The first successful birth by this method called “test tube baby” occurred in 1978. By this method women who are past their reproductive years or menopause can still become pregnant.

In the process of fertilization many embryos are generally formed. The number of embryos transferred to uterus depends on number available, the age of woman and other health and diagnostic factors. Transfer of more embryos may result in pregnancy carrying multiples and pose risks to the mother. For this reason most clinics and country regulatory bodies have formed regulations regarding the number of embryos that can be transferred. IVF success rates that result in favourable outcome have been found. The live birth rate is the percentage of all IVF cycles that lead to a live birth. This is seen to vary with the age of the mother. As a general rule birth rate varies between 20% and 40% and the pregnancy rate between 30% and 48% below 40 years of age.

The major complication in IVF is the risk of multiple births. Also the chances of birth defects in IVF procedures are higher than in the normal way of conception. Further there may be leftover embryos in this procedure. These extra embryos may be donated to other women or to an embryo bank where they are preserved by cryopreservation technique. Alternatives to donating unused embryos are destroying them or donating them for use in research.

During the selection and transfer phases many embryos may be discarded in favour of others. This is a question of ethics as no consensus exists in science, religion and philosophy on when during the development of a human embryo, it should be recognized as a new person. The Roman Catholic Church opposes all kinds of artificial contraception, asserting that they separate the procreative goal of marital sex from the goal of uniting married couples and on grounds of disposal of embryos: in Catholicism, an embryo viewed as an individual with a soul that must be treated as a person. The Roman Catholic Church permits the use of contraceptive methods like Natural family planning, which involves charting ovulation times. In Islam the IVF of an egg from the wife with the sperm of her husband and the transfer of fertilized eggs back to the uterus

of wife is allowed, provided that the procedure is indicated for a medical reason and is carried out by an expert physician. A third party donor is not acceptable as it tantamount to adultery.

Besides the religious view there are social and cultural considerations attached to IVF which become important in decision making. High costs of IVF procedure is another factor that keeps it out of reach of many developing countries. Some governments have enacted rules for IVF procedures. Government agencies in China passed bans on the use of IVF in 2003 by unmarried women or by couples with certain infectious diseases. Costa Rica has a complete ban on IVF technology.

To have the Jain position on IVF we must know at what stage the soul (jiva) enters the new body, the embryo. It is believed in Jainism that the soul enters the body at the time of conception. Does it happen when an embryo is formed in the laboratory or when the embryo is transferred to the uterus? According to the belief two processes must occur immediately after the soul occupies the embryo. One is that of *paryapti* which is completed in less than an Indian hour, *antarmuhurta*, i.e. in a few minutes after the conception. Second the body is endowed with vital powers. *prana*, which are essential for growth of embryo. Further growth takes place only if *paryapti* process is completed. In case of non-completion of *paryapti* the embryo dies. Once dead the embryo is rendered non suitable for new life. From the above mentioned scientific practices we find that the extra embryos are preserved in an embryo bank and used on demand in future. This means that the preserved embryos are suitable for life which indirectly shows that the *paryapti* process has not taken place. We therefore infer that the *paryapti* process begins when the embryo is transferred to the uterus, i.e. conception takes place only in transferred embryos. This shows that conception must be distinguished from embryo formation. These two processes take place simultaneously in the normal case of fertilization in vivo but are separated by a time interval in case of IVF.

So does Jain religion permit IVF procedure? The IVF procedure is seen to be a purely physical process of combining egg and sperm in a laboratory without involving a soul. It may be noted that the egg and sperm are *sachit*, manifested with consciousness, when inside the body of donor but when removed from body they are *achit*, lacking consciousness, and are purely physical entities. The embryo becomes *sachit* when transferred to uterus and is occupied by the incoming soul and conception takes place. So if only one embryo was produced in the IVF procedure and that was transferred to the uterus for the purpose of conception there would be no objection. But this does not happen. In practice many embryos are formed and the extra embryos are used by either donating to a woman or to an embryo bank, which ultimately tantamount to adultery that is condemned in Jainism. In case the embryos are used for research or are destroyed, this amounts to killing potential lives and is a violent act. Thus the practical application of IVF procedure goes against the Jain principles and is not permissible.

The better way of overcoming the infertility problem is to adopt a child. And if the child is an orphan this practice would earn the parents some good merit, *punya*, by helping a needy person.

2.3 Surrogacy

Surrogacy is an arrangement in which a woman carries and delivers a child for another couple or person [8]. This woman, the surrogate mother, may be child's genetic mother (called traditional surrogacy), or she may be genetically unrelated to the child (called gestational surrogacy). In traditional surrogacy the child may be conceived via home artificial insemination using fresh or frozen sperm or impregnated via IUI (intrauterine insemination) or ICI (intra

cervical insemination) performed at health clinic. A gestational surrogacy requires the implantation of a previously created embryo, and for this reason the process always takes place in a clinical setting. The intended parents may arrange a surrogate pregnancy because of homosexuality, female infertility, or other medical issues which make pregnancy or delivery impossible, risky or otherwise undesirable.

The surrogate receives compensation beyond the medical and other reasonable expenses, the arrangement is called commercial surrogacy, and otherwise it is often referred to as altruistic surrogacy. The legality and costs of surrogacy vary widely between jurisdictions.

Traditional surrogacy is not adultery. The process involved is physical operation like any other medical treatment that is given to treat the body deficiency. Hence this is not objectionable in Jain view. However, there are two main objections to gestational surrogacy. One the embryo is formed from the egg and sperm of the donor parents in a laboratory that usually involves production of multiple embryos at a time, as mentioned in case of infertility, and loss of potential lives in the form of unused embryos. Second, gestational surrogacy involving third party tantamount to adultery, which is forbidden in Jainism. Besides this surrogacy may also promote unwanted practice in society such as the couple not having a child in the normal way, and face the risk and discomfort of pregnancy that may restrict personal freedom of having a particular lifestyle, and thus destroying the traditional cultural values in the society. The surrogacy is also found to cause exploitation of women in under developed countries or poor women by the rich raising ethical questions.

2.4 Organism Cloning

Organism Cloning (also called reproductive cloning) is the procedure creating a new multi cellular organism, genetically identical to another [9]. This is an asexual method of production where fertilization does not take place. Asexual reproduction is a naturally occurring phenomenon in many species, including most plants, bacteria and some insects. Females of some insects, crustaceans, nematodes, fish, the Komodo dragon and lizards produce off springs without a mate.

Reproductive cloning generally uses “somatic cell nuclear transfer” to create animals that are genetically identical. This process entails the transfer of a nucleus from a donor adult cell (somatic cell) to an egg (or a cell from blastocyst) from which the nucleus has been removed. If the egg begins to divide normally it is transferred into the uterus of the surrogate mother. Such clones are not strictly identical. Identical twins are produced when a donor embryo is split in two distinct embryos and transferring these embryos to uterus. Scientists have been able to successfully clone many species of mammals like sheep, mice, pig, tadpole, carp, monkey, cattle, cat, rat, mule, horse, dog, wolf, buffalo, camel, goat, etc. However such cloning is not easy, hundreds of attempts are required before creating a successful clone. The first mammalian cloning of Dolly the sheep had a success rate per 277 fertilized eggs of 29 embryos, which produced three lambs at birth, one of which lived. For a bovine experiment involving 70 cloned calves, one third of them died young. For horses, the first trial took 814 attempts. Animals are currently cloned in laboratory and in livestock production. Cloning of animals is opposed by animal groups due to number of cloned animals that suffer from malformations before they die and are concerned about food safety in consuming livestock meat, which is in practice in USA and Europe since 2005.

The possibility of human cloning has raised controversies. Two common discussed types of theoretical human cloning are therapeutic cloning and reproductive cloning. Therapeutic

cloning would involve cloning cells from a human for use in medicine and transplants, and is an active area of research, but is not in medical practice anywhere in the world as of now. Reproductive cloning would involve making an entire cloned human, instead of just specific cells or tissues. Both types of cloning are not commercially used.

Should humans be cloned? Physicians from the American Medical Association and scientists with the American Association for the advancement of Science have issued formal public statement, advising against human reproductive cloning. Due to the inefficiency of animal cloning and the lack of understanding about reproductive cloning, many scientists and physicians strongly believe that it would be unethical to attempt to clone humans. Scientists do not know how cloning could impact mental development, while factors such as intellect and mood may not be important for a cow or mouse, they are crucial for the development of healthy humans. With so many unknowns concerning reproductive cloning, the attempt to clone humans at this time is considered potentially dangerous and ethically irresponsible.

Advocates support development of therapeutic cloning in order to generate tissues and whole organs to treat patients who otherwise cannot obtain transplants, to avoid the need for immunosuppressive drugs, and to stave off the effects of aging. Advocates for reproductive cloning believe that parents who otherwise cannot produce should have access to the technology. Opponents of cloning have concerns that technology is not yet developed enough to be safe, that it could be prone to abuse (leading to the generation of humans from whom organs and tissues would be harvested), and have concerns about how cloned individuals could integrate with families and with society at large.

Religious groups are divided, with some opposing the technology as usurping God's place and, to the extent embryos are used, destroying human life; others support therapeutic cloning' potential life-saving benefits. Several attempts and trials have been made to produce improved quality of animals. Similar experiments are also underway to improve the level of human beings. Scientists aim to improve the cell quality in animals and humans by changes in genes have not yielded desired results. The scientific attempts cannot assure that the moral, intellectual and social qualities can be improved by cloning.

Socio-political aspect of reproductive human cloning is also important. Questions like name of father and mother, birth certificate, domicile, nationality, voter ID card, family card, passport, raising and bringing up the clone, social relationship like marriage, inheriting property and other rights, category for the purpose of education and employment, membership of a community, insurance, etc. shall be posed and will be difficult to resolve.

In Jain view organisms are just not physical structures but are souls having a physical structure. An organism is a system consisting of soul, subtle bodies- karma body and fiery body, and the visible material body. The structure, functions, and mental and emotional qualities of the organism are mainly dependent on karmic load; the genetic codes, held responsible for the structure and performance of the body by science, are also supposed to be influenced by karma. So the karmas bonded to the soul are the most important factors determining the physical, mental, emotional and spiritual performance of the organism.

As stated above once the fertilized eggs are transferred to the uterus the embryos developed are *sachit*, manifested with life, and their death is considered as killing. In organism cloning there are generally a large number of trials in which live embryos are killed and therefore Jainism is opposed to this technology.

The cloned livestock are not different from normal organisms from the point of view of life and their killing involves as much violence as in killing of normal organisms. Therefore the

concept of using cloned livestock for meat consumption, assuming them to be different from the normal organisms, is totally misplaced. Killing of any kind of organisms, whether normal or cloned, is violence and sin.

Therapeutic cloning is the process taking place in laboratory and is assumed to be an entirely physical phenomenon. Jainism has no objection to his procedure if it is carried out with good intention of helping the humanity. Multiplication of cells is a physical process and is dependent on the organizing power of matter (*pudgala*). However formation of an organ needs higher organizational intelligence and is difficult to take place in the laboratory. In the normal process the intelligence of karma, derived from the soul, is supposed to direct the genes to form an organized structure in the form of an organ.

The hope that reproductive cloning could produce a human being with desire quality is baseless. As stated above the qualities of the human being are not just contained in the genes of the egg and the transferred nucleus in cloning but are mainly governed by karma bonded to the soul that enters the embryo on conception. The killing involved in the reproductive cloning process and the socio-political problems in human cloning mentioned above make human cloning a highly violent and objectionable act from Jain point of view. Jainism makes no distinction between the normal human beings and the clone human beings as far as life is concerned and therefore harvesting organs and tissues from cloned humans is as objectionable as from normal human beings.

2.5 Contraception and Human Population Control

Contraception is the prevention of the fusion of gametes during or after sexual activity. Contraception can occur both naturally and via artificial means in humans. Contraceptive devices and methods are used both in males and females. Human population control is the practice of altering the rate of growth by limiting birth rate [10]. Such controls have been undertaken as response to factors including high or increasing levels of poverty, environmental concerns, religious reasons, and over population. Some people advocate for reproductive rights, as a subset of human rights, and freedom relating to reproduction and reproductive health.

The Roman Catholic Church has opposed abortion, sterilization, and contraception as a general practice, but specifically in regard to population control policies. Muslims generally are opposed to birth control for religious reasons. Jainism advocates celibacy for two reasons. One the act of copulation is supposed to cause killing of thousands of (potential) lives. Second the followers are ordained to exercise control on sensual pleasure as this practice removes one away from the path of salvation. Sexual activity is permitted to the extent of having reproduction to carry on the family lineage. Following the practice of celibacy the problems of over population and the need for population control are eliminated. Jainism is opposed to sterilization and contraception and expects its followers to exercise self-control and abstain from sexual activity and reproduction more than necessary.

2.6 Blood Transfusion

Blood transfusion is the process of receiving blood products into one's circulation intravenously [11]. Early transfusions used whole blood, but modern practice commonly uses only components of the blood such as red blood cells, white blood cells, plasma, clotting factors and platelets.

Objections to blood transfusion may arise for personal, medical, or religious reasons. For example Jehovah's Witnesses object to blood transfusion primarily on religious grounds – they

believe that blood is sacred; the Bible says “abstain from blood”. They have also highlighted possible complications associated with transfusion.

Jainism in principle is not opposed to voluntary blood donation and transfusion. Blood inside the body is *sachit*, manifested with consciousness, but it becomes *achit*, lacking consciousness, when out of body. Blood drained out of body is a material product and its transfusion is not objectionable. Voluntary blood donation does not hurt the feelings of the donor and is a non-violent activity. Taking out the blood forcefully hurts the feelings and is an act of violence and is considered as sin. Transfusion of blood helps the receiver in health recovery and tantamount to an act of merit to the donor. Of course, care has to be exercised that the transfusion of blood causes no harm to the receiver. Blood donation is a common practice in Jain community and camps are organized for voluntary donors.

2.7 Organ Donation and Transplantation

Organ donation is the donation of biological tissues or an organ of the human body, from a living or dead person to a living recipient in need of a transplantation [12]. In allotransplantation the organ is transferred from one human body to another human body and in Xenotransplantation the transfer is from an animal body to human body. The primary issues surrounding the morality of organ donation includes the definitions of life, death, human and body. Most organ donation for organ transplantation is done in the setting of brain death. Brain death may result in legal death, but still with the heart beating, and with mechanical ventilation all other vital organs may be kept completely alive and functional providing optimal opportunities for organ transplantation. Whether or not a brain-dead patient ought to be kept artificially animate in order to preserve the organs for procurement is an ongoing problem in clinical bioethics. The non-living donor is kept on ventilation support until the organs have been surgically removed.

Certain groups, like Roma (gypsies), oppose organ donation on religious grounds, but most of the world’s religions support donation as a charitable act of great benefit to the community. Some animal rights groups oppose the sacrifice of an animal for organ donation and have launched campaigns to ban them. Some people advocate cloning to produce organs, the clones is destroyed for organ procurement. Organ donation and transplantation has raised many socio-economic issues. The donors are usually poor and the recipients are rich people. Because of organs far outstrips supply, black market trends, often referred to transplant tourism have been created. Many donors regret later on in life. The black market for organs has encouraged cases of organ theft including murder. Chennai has emerged as one of the largest black markets for organs. Economic drivers leading to increased donation are not limited to areas such as India and Africa, but also are emerging in USA to reduce or eliminate the funeral costs.

In USA the Uniform Determination of Death Act has defined death as the irreversible cessation of the function of either the brain or the heart and lungs. The interpretation of “irreversible” has provoked ethical concerns since “patients may still be alive 5 or even 10 minutes after cardiac arrest because, theoretically, their hearts could be restarted meaning that their condition was reversible.

Organs that can be transplanted are the heart, kidney, liver, lungs, pancreas, intestine and thymus [13]. Tissues include bones, tendons, cornea, skin, heart valves, and veins. Worldwide, the kidneys are the most commonly transplanted organs, followed closely by the liver and then the heart. The cornea and musculoskeletal grafts are the most commonly transplanted tissues. Tissues may be recovered from donors who are cardiac dead – up to 24 hours past the cessation

of heartbeat. Unlike organs, most tissues (with the exception of cornea) can be preserved and stored for up to five years.

It is now well realized that the body is different from the soul in Jainism. The body is changed in every life where as the immortal soul never dies. The body is important to the extent that it is necessary to live a particular life span and carrying out the physical, verbal and mental actions for supporting life activity. There are instances in which the soul wilfully leaves the body causing death. In the practice known as *sallekhana* or *santhara* in Jainism, described below, the person renounces his or her body with a sense of equanimity without having an iota of feeling of death. This practice is resorted to when it is felt that the body is no more useful in carrying out the life activity for advancing on the path of liberation. The point to be made here is that the soul is not supposed to own the body, which has only a limited purpose. In the strict sense the body is not for enjoyment, although this is difficult to realize in normal life. The body manifested with consciousness of the soul is only an internal auxiliary cause (*nimitta*) in the transformation of the soul. The body and its parts are physical supports to life in Jainism. If a soul wilfully decides to donate any part of the body or organ or tissue it does not tantamount to violence and is not objectionable. Of course forcefully removing or theft of the organ or part causing pain to soul is not approved. So if the person wilfully declares that on brain death the organs be removed from the body no offence is committed. Jainism has therefore no objection in wilful organ donation with the view to benefit other lives. Jainism is against Xenotransplantation in which case the animal is killed or the organ is removed without consent. Use of the body after heart death or real death for any charitable purpose is not objectionable provided the feelings of the family members are not hurt.

Organ transplantation is a physical addition to the physical support system, the body of the recipient soul. The organ inside the body is *sachit* and is *achit* when taken out of body. There is no objection to plant this organ into the body of the recipient. If the organ is accepted by the body it is now manifested with the consciousness of the recipient's soul and is integrated into his/her body system.

2.8 Human Enhancement

Human Enhancement refers to any attempt to temporarily or permanently overcome the current limitations of the human body through natural or artificial means [14]. The term is sometimes applied to the use of technological means to select or alter human characteristics and capacities, whether or not the alteration results in characteristics and capacities that lie beyond the existing human range. The technology could be used for non-therapeutic purposes e.g. application of neuro-, gene-, cyber-, and nano-technologies-and cognitive science to improve human performance.

Human enhancement through artificial means has evoked criticism and controversy on several grounds like protection of the right of citizens, its eugenic overtones, affecting human biodiversity, possibility of reckless and selfish use with short-term perspective (ignorant of the long-term consequences on individuals and society), etc. Advocates of this “enabling” technology defend and promote rigorous, independent safety testing as well as affordable and universal access to it.

The body in Jainism is constructed by form producing (*naam*) karma bonded to the soul. The performance of the body is also influenced by other biological karmas like feeling producing (*vedniya*) karma and performance quality determining (*gotra*) karma. The cognitive, behavioral, psychological and intellectual aspects of the soul are determined by psychical karma. These

karmas work more or less independent of the biological karmas but these two types of karmas together determine the overall characteristics of the soul performance. So, changes in body structure are expected to have only marginal affect on the psychical performance of the soul. Therefore the attempts to improve human performance by changes in the body structure are not likely to succeed in any significant way except to enhance the body abilities and improve the cognitive and psychical abilities to the extent the influence such changes have on the psychical performance, which is marginal. The fear of influence of body changes on human biodiversity, neurodiversity and cognitive performance are not supported by Jainism as all these features are karma based. This points out to the fact that attempts of scientists to enhance the human performance by body changes are misconceived and is waste of time, money and energy.

2.9 Life-Extension

Life extension science is the study of slowing down or reversing the process of aging to extend both the maximum and average life span [15]. Some researchers believe that future breakthroughs in tissue rejuvenation with stem cells, molecular repairs and organ replacements will eventually enable humans to have indefinite life spans through rejuvenation to a healthy youthful condition. Medical experts state that anti-aging products now sold in the market have not been shown to affect the aging process.

Most mainstream medical organizations and practioners do not consider aging to be a disease. They say that aging is both inevitable and universal while diseases are not. But there are others who argue that aging should be viewed as a disease. Some are of the view that over population problems would make life extension unethical.

In Jainism the life span is pre decided before the birth and cannot be extended indefinitely by any means. Two types of life spans are defined in Jainism one determined by life span determining karma i.e. the karmic age and the other is the chronological age. The karmic age is fixed and forms the upper limit of the chronological age. The chronological age depends on body conditions, meeting with any accident and natural calamity but cannot exceed the karmic age. So any attempt to rejuvenate the body by way of stem cell, etc. can have only marginal effect in extending the life span within the limits prescribed. Further it must be noted that aging is a natural process and in inevitable and it is a false hope and expectation that youthful condition can be maintained for much longer times though the body can be kept in healthy condition and chronological age can be prolonged by proper initiatives like yoga and meditation, which enhances the immune system and increases blood circulation to mind, heart, kidney and other vital organs thereby increasing the vitality of the body, and use of appropriate drugs.

2.10 Euthanasia and *Sallekhana/Santhara*

Euthanasia refers to the practice of intentionally ending a life in order to relieve pain and suffering. Euthanasia can be voluntary, non-voluntary or involuntary. This can be further divided into passive or active euthanasia. Passive euthanasia entails the withholding common treatment, such as antibiotics, necessary for the continuance of life. Active euthanasia entails the use of legal substances or forces, such as administering a lethal injection, to kill and is the most controversial means. However, a number of authors consider this kind of division to be misleading and unhelpful. Voluntary euthanasia is legal in some countries and U.S. States. Non-voluntary euthanasia is illegal in all countries. Euthanasia is peaceful and dignified death to the incurably diseased, and immitigably suffering which means a good death or dying well.

Sallekhana is a religious practice in Jainism; it is way to prescribe voluntary death as a religious observance for spiritual purification, emancipation and final liberation [16-18]. In *sallekhana* an ascetic or a householder faces death voluntarily when he is nearing his or her end and when normal life according to religion is not possible due to old age, incurable disease, etc. after subjugation of all passions and abandonment of all worldly attachments by observance of austerities gradually abstaining from food and water, and simultaneous meditation on real nature of self until the soul departs from the body. Thus, we see the concept behind this practice in as much as it recognizes the man as the master of his own destiny, who prepares himself for the final moment of his life in a manner that when he faces death, he not only does not attract and bind new karma, but liberates from the clutches of the karma that might stick to it at that time. This topic is discussed in detail by D.S. Baya in this volume.

3 Faith Healing and Spiritual Healing

Faith healing is healing through spiritual means [19]. Believers assert that the healing of a person can be brought about by religious faith through prayers and/or rituals that, according to adherents, stimulates a divine presence and power toward correcting disease and disability. The term is best known in connection with Christianity. Some people interpret the Bible, especially the New Testament, as teaching belief in, and practice of, faith healing. There have been claims that faith can cure blindness, deafness, cancer, AIDS, developmental disorders, anaemia, arthritis, corns, defective speech, multiple sclerosis, skin rashes, total body paralysis and various injuries. Unlike faith healing, advocates of spiritual healing make no attempt to seek divine intervention, instead believing in divine soul energy.

A Cochrane review of intercessory prayer found conflicting evidence for claims of a positive effect, but there was a conclusion that “evidence presented so far is interesting enough to justify further study.” A group at John Hopkins published a study in 2011 reporting no significant effects on pain, mood, health perceptions, illness intrusiveness, or self-efficacy, but a small improvement in reported energy in a double-blind study to test the efficacy of spiritual exercise in chronically ill adults.

Christian theological criticism of faith healing falls into two distinct levels of disagreement. The first is widely termed the “open-but-cautious” view of the miraculous in the church today. The second level goes further. Commonly referred to as cessationism, its adherents either claim that faith healing will not happen today at all, or may happen today, but it would be unusual. Sceptics of faith healers point to fraudulent practices either in the healing themselves (such as plants in the audience with fake illness), or concurrent with the healing work supposedly taking place and claim that faith healing is a quack practice in which the “healers” use well known non-supernatural illusions to exploit credulous people in order to obtain their gratitude, confidence and money.

Not believing in the Creator God or any supernatural power Jainism does not believe in so called faith healing. Faith healing by intervention of divine presence according to Jainism is a blind belief. However, Jainism strongly believes in spiritual healing that takes place by the powers of the soul. Soul in Jainism is supposed to have infinite powers and can affect healing. To understand this process we need to know about our existence as human beings first.

The soul is a non-physical entity and is embodied by its karma. The worldly soul is impure due to association with karma which is in the form of subtle matter. The karma body so constituted is always attached to the soul and migrates from one birth to another, till the soul is liberated. The karma body contains and carries information of all actions performed by the soul.

Similarly, there is another subtle body called fiery (*taijas*) body that is coupled to the karma body and this body is made up of subtle energy. The soul occupies a physical body because of karma and the energy of the fiery body helps in construction, structure, operation and functioning of the physical body according to the information available in the karma body. The ailments and diseases in the physical body are developed by both the effects of external environment as well as by the internal effects of karma, besides the disorders developed in the body itself. The mental state of a person has an important role in this development.

The healing takes place by the manifestation of powers of the soul in the body and mind. The phenomenon is explained by the doctrine of karma. The person suffering from ailment or disease has to arouse the powers of the soul by means of practices like meditation, contemplation, yoga, *pranayama*, *japa* (recitation of mantra), etc. Such practices are effective because they either prevent rise of karma or become cause for shedding of the rising karma responsible for the particular disease or ailment. On elimination of the cause the healing takes place. Such practices are more effective when the person has faith in the powers of the soul, has pure feelings, and is mentally concentrating on the purpose for which he or she is engaged in this exercise. It is important to note that healing is conditional to these factors and, therefore, it may vary from case to case and repetition in an experimental environment may be difficult.

Spiritual healing may happen in two ways. One, the spiritual practitioners generally maintain good health which is the preventing mode of healing. Second, the affected person undertakes special penance practice as mentioned above. The effects of practice are rather slow and the person has to keep patience and maintain calm and confidence over the period of time.

Prayers are also recognized to have healing effect in Jainism without intervention of any divine presence. The effectiveness of prayers would depend upon the faith and confidence level of both the persons praying and the target person. There is, therefore, considerable subjectivity in this method of healing. The mechanism of healing in this case is not clearly known but this may be due to transfer of subtle fiery energy (or *prana*) from the praying persons to the target person (as it happens in Reiki). It has been found by Korotov [20] that the aura of a water drop is enlarged by prayers. In this case it is presumed that the water drop is *sachit* and therefore has a *tejas* body. It is speculated that a stream of *prana* is emitted and transmitted from the body of the praying person, by influence of prayers, and is received by the *tejas* body of the target drop. This input of *prana* enlarges the aura of the drop. Our body contains about 70 percent water, which is in *sachit* state. Prayers, therefore, influence our aura in the same way as that of the water drop. *Prana* is healing agent, the incident *prana* heal the body by supplying extra energy to the affected part. Korotov gives examples of healing by prayers.

It should be noted that the phenomenon of effect by prayers is taking place at a physical level by transfer of *prana* from one person to another. It should not be taken as soul-to-soul effect as one soul is not the doer of another soul. *Prana* is subtle energy and its transmission is not obstructed by gross objects. Therefore, prayers can work on a person at a remote distance also.

3.1 Meditation

Man in order to escape his conflicts and treat body ailments (diseases), has invented many forms of mediation. They have been based on desire, will and the urge for achievements. This conscious, deliberate striving is always within the limits of a conditioned mind and all efforts to meditate through faith only [21].

In meditation one must lay the foundation of orders, which is righteousness, the social morality and the order that comes of understanding disorder. The disorder exists as long as there are conflicts, both out worldly and in worldly. There is freedom only when there is understanding of the function of knowledge and therefore freedom from known.

Meditation means awareness: To be aware of what you are doing, what you are thinking, what you are feeling, aware without any choice, to observe, to learn. There is repetition of words, of sentences, mantras - a set of phrases given by a Guru (Rishi-Munis). We thus accept the supreme authority of somebody who says, 'I know, I have achieved, I have realized'. The man who practises the art of spiritual meditation is our religious Guru.

Meditation is to be aware of every thought and of every feeling, and never to say it is right or wrong, but just to watch it and move with it. The silence that comes when thought has understood. This silence is meditation in which the meditator is entirely absent, but the mind has emptied itself of the past. The brain, the nervous system and what we call the mind are all one, indivisible. It is the natural act of meditation that brings about the harmonious movement of the whole body and mind. The mind can be made still through the repatriation of words 'mantras' in rhythmic order. In meditation the first thing to realize is that it is no use to seek, for what is sought is predetermined by what you wish.

3.2 Mantra

Mantras are powerful sounds and when chanted with devotion produce enormous effects. Mantras are well-off in their meaning and can be medicated while chanting.

The Vedas are full of mantras, therefore have been kept for ages in their raw form to use in the different practices like *patha*, *karma*, *jata*, *gana*, *patas* [22]. It has been done to ensure that the chanter clearly interprets the correct letters and sound for each letter (*svara*). People are advised to chant the mantras only when they know the correct pronunciation of it. That is how mantras are saved from deterioration with time.

Some more facts about mantras are [23]:

Mantras are Energy-Based Sounds: Sound is the foremost content of the creation. Mantras are divine sounds. Saying any word produces an actual physical vibration. Mantras appear really powerful when this sound effect reaches the mind and the surroundings.

Mantras Creates Thought-Energy Waves: Mantras, when chanted sincerely produces a state where the organism vibrates at the rate completely in tune with the energy and spiritual state, represented by and contained within the mantra.

Mantras have Fire- like Energy: Mantras have fire like energy which can bring a positive and beneficial result or it can produce an energy meltdown when misused or practiced without some guidance. There are certain mantra formulas which are so exact, so specific and so powerful that they must be learned and practiced under careful supervision by a qualified Guru.

Mantras Eventually Quiet the Mind: At a deep level, subconscious mind is a collective consciousness of all the forms of primitive consciousness which exist throughout the physical and subtle bodies. Sincere use of mantra can excavate into subconscious crystallized

thoughts stored in the organ and glands and transform these bodily parts into repositories of peace.

Case Study

Here we sight a living example of spiritual healing. The second author Dr. I.L. Jain suffered from Tumour Acinar head of Pancreas in year 1997 (at the age of 56). It was first diagnosed at SMS hospital Jaipur by Dr. Ramesh Roop Rai and Dr. S. Sharma's team. Later, the same was confirmed by Dr. M.M. Sharma of AIIMS Delhi. In May, 1998 he suffered from acute Pancreatitis and in critical condition was admitted to RNT medical college Hospital under Dr. C.S. Babel. Seeing the critical condition and a mass of size of 27 x 24 mm at the Acinar head of Pancreas, seen in CT scan Abdomen, he was referred to Bombay Hospital, Mumbai, under treatment of Dr. Deepak Amarapurkar (a famous gastroenterologist). Again it was confirmed as a vacuolated mass of Pancreas head, and he was discharged with the advice to take fat and protein free diet and engage in prayers for 4-6 months, as there was no treatment.

Seeing this critical condition, where he lost 23 kg weight in 2 months period, he was taken to Ganadharacharya Muni Shri Kunthoo Sagar Ji at Bombay (Boriwali), by his brother in law and his wife. There, after chanting of *slokas* and Shantimantra prayers, Acharaya said not to worry. He asked Dr. Jain to go home and to chant the following mantra daily in the morning in white dress, 9 times in the first week and then gradually increasing it to 108 times. The mantra was "Om Harim Namō Arihantanam, Om Harim Namō Shidhanam, Om Harim Namō Ariyantanam and Om Harim Namō Uvajayanam, On Harim Namō Lohesava Sahunam". (ॐ ह॒रि॒म॒ न॒मो॒ अ॒रि॒ह॒न्त॒ना॒म॒, ॐ ह॒रि॒म॒ न॒मो॒ शि॒ध॒ना॒म॒, ॐ ह॒रि॒म॒ न॒मो॒ अ॒रि॒य॒न्त॒ना॒म॒, ॐ ह॒रि॒म॒ न॒मो॒ उ॒व॒ज॒या॒ना॒म॒, ॐ ह॒रि॒म॒ न॒मो॒ लो॒हे॒सा॒वा॒ सा॒हु॒ना॒म॒)।

Chanting of mantra loudly and rhythmically 108 times, sitting in *Sukhāsana* (comfortable) pose and facing east, took about 45 minutes. By this regular practice Dr. Jain started feeling energetic and gradually started putting on weight. He now resumed his normal duty of going to hospital. In May 1999, that is after 9 months of practice of mantra recitation, his CT Abdomen was repeated and it was found that Tumour Size had decreased to 12 x 10 mm, just half of the size in May 1998. At this stage he approached to Dr. Deepak Amarapurkar and reported the developments to let him know the above facts. Dr. Deepak was astonished, and asked him to continue the practice.

Dr. Jain continued the practice of prayers and chanting the mantra. In Nov. 2000 CT Abdomen was again repeated and it was found that there was hardly any measurable tumour tissue that is almost no mass acinar head Pancreas was present.

4. Conclusions

The medical practices of abortion, infertility and artificial conception, organism cloning, contraception and human population control, blood transfusion, organ donation and transplantation, human enhancement, life extension, euthanasia and faith healing have been briefly introduced. The relevant Jain principles of life and death, vital powers, biopotentials and violence for examining these practices from Jain point of view have been briefly described. It is shown that Jainism does not approve the practices of abortion, the IVF technique of artificial conception, gestational surrogacy, organism and human cloning, contraception and human population control practices, and euthanasia. Jainism has no objection to traditional surrogacy, therapeutic cloning, blood transfusion, and organ donation and transplantation. According to

Jainism human enhancement by bio-medical means is not possible. It is admitted that life extension practices can lead to healthy life span and in prolonging the chronological age within the karmic limits. It is shown that Jain practice of *sallekhana* is not euthanasia; the two practices are compared and it is shown that *sallekhana* is spiritually rewarding practice. Faith healing as spiritual healing is practiced in Jainism and is accepted on logical grounds explained by karma theory.

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