INTRODUCTION

Ayurveda is a holistic way of living and basic principle of Ayurveda is “swasthasya swasthya rakshanam aturasya vihara prasamana cha. (Sudhaka, 2006).

Ayurveda not only focus on preventive and promotional health, but also has strong footings in the field of healthy progeny. Pregnancy is a beautiful period in women's life. Ayurveda believe on “pregnancy by choice not by chance” and life of women is not complete until and unless she gets pregnant and gives birth. In Ayurveda, Regular supervision of a woman during pregnancy is called Garbhini paricharya (antenatal care). Garbhini paricharya was advised
thousands of years ago in classical texts of Ayurveda for pregnant women are now proven completely scientific. The term Garbhini Paricharya is a compound of two separate words i.e. Garbhini & Paricharya. According to Amarkosha, Garbhini means a woman in which Garbha is present (Amarakosha, 2001) and ‘Paricharya’ means caring in every aspect. Garbhini Paricharya includes all aspects of care of pregnant women like Ahara (dietary regimen), Vihara (activities), Pathya (wholesome diet) Apathya (unwholesome diet), Yoga and Meditation etc.

Ayurveda has beautifully explained a quotation regarding the care of pregnant women that the Garbhini should be treated just like a pot filled with oil as the slightest oscillation of such pot can cause spilling of oil similarly slightest stimulation in Garbhini can cause Garbhapata (abortion) or Garbha vikriti (anomalies in fetus). Fetal growth is dependent also on the normalcy of Shadbhava, use of appropriate diet and mode of life style by pregnant women, the fetus obtains normal growth and development by getting nourishment from upsneha and upsweda of mother (Shastri, 2005d). Ayurveda described many factors which are responsible for the abnormal development of fetus in morphology, complexion, and sense organs such as abnormality in Dosha of Beeja (Ovum and sperm), Atma-Karma (Soul manifestation), Ashaya (Uterus), Kala (effect of age) and Matur Ahara-Vihara (Diet and regimen of mother) (Pandey and Chaturvedi, 2005a). Ayurveda described many things to be avoided by mother during pregnancy in terms of Aharas and Viharas. If those avoidable things indulged by the Garbhini (Pregnant women), then so many abnormalities occur in pregnant women and progeny.

In Modern medical science, antenatal care (ANC) is systemic supervision of pregnant lady including the examination & advice from beginning of conception to delivery. It is also called as prenatal care, pregnancy care or maternity care. Pregnancy is a critical time to promote healthy behaviors and parenting skills. Good ANC can also play a critical role in preparing a woman and her family for birth by establishes assurance between the pregnant women and doctor by individualizing promotional health messages (WHO, 1996). Additional antenatal visits may raise understanding about the need for care during delivery (Graham et al., 1996). Organogenesis is that period when important organ of fetus are developing. It is 6-10 weeks of intra-uterine life and during this period fetus prone for birth defects caused by external factors. Each stage of fetal development is dependent and influenced by appropriate maternal nutrient supply and proper life style. Modern medicine describes antenatal Care by describing antenatal Diet i.e. extra calorie diet, diet to prevent Anemia, Personal Hygiene, Rest and Sleep, Exercise, Light Work, drugs prohibited and Coitus, etc. (Park, 2011)

In Ayurveda, Garbhini Paricharya (Antenatal care) advised for a pregnant woman can be summarized under following three categories such as Masanumaski Pathya ahara and Vihara (Monthly dietary regimen) Garbhashtapak karma (diet and lifestyle regimen) Garbhopaghatakar Bhavas (diet and lifestyle which are harmful to fetus). Out of many factors which are responsible for overall development of fetus, Garbhini ahara-vihara plays very important role.

Masanumaski Pathya Ahara (Monthly dietary regimen) during pregnancy

Ayurveda advised that Garbhini (pregnant lady) should take sweet, liquid, nutritive diet with good quantity of milk, freshly cooked rice, meat or meat soup, butter extracted from milk, milk cooked with Madhura group of drugs and other congenital diet. Ahara that used by pregnant women in her diet, should not be Atiguru (heavy to digest), Atishnha (hot), Atitikshna (bitter and spicy foods), Ahita and Viruddha (unwholesome) (Pandey and Chaturvedi, 2005d). Fetus derives its nutrition from mother, what so-ever she takes the rasa derived is divided in three parts i.e. for the nourishment of the mother, for nourishment of fetus and for development of breasts / formation of breast milk (Satyapal, 2008b). The requirement of mother nutrition varies according to development of fetus and changes month wise.

Effect of excessive use of Rasa on fetus

The diet has to be balanced, excess use of any particular rasa or Doshra aggravating causes various congenital abnormalities or influences gene expression at a later life producing various diseases (Shastri, 2005b).

If pregnant women consume extra sugar or sugar sweetened beverages (SSBs) in diet it may adversely impact on child cognition while consumption fruit promote healthier effect on childhood cognition. Pregnant women who consume high levels of free sugars during pregnancy are more likely to give birth to a child with allergy or allergic asthma. High salt intake during pregnancy may lead to water retention, hypertension and pre-eclampsia. High spicy food intake during pregnancy may increase acid reflux, aggravating heart burn and morning sickness.

If pregnant women take Vata aggravation diet then fetus may suffer from Kubja (dwarf), Kuni (Arm
without hand or finger), *Pangu* (motionless limb), *Muka* (Dumb) and *Minmin* (Nasal voice). If any body part of pregnant women is affected by the *Vatadadosha*, then the same part of the fetus will also be get affected by *Vatadidosha*. If pregnant women take *Kapha Vardhak Ahara* then fetus may suffer from - *Kastha* (Skin diseases), *Kilasa*, *Switra* (Ludoderma) and *Jannajata Pandu roga* (Congenital anemia) (*Atrived*, 2009).

**Effect of Diet and environment in Pregnancy**

In present time air, water and soil all are polluted than earlier. Most of these contaminators act on endocrine system of pregnant women by interfering the hormones to cell. According to the “Developmental Origin of Health and Disease” hypothesis, fetuses are mainly predisposed to the impact of nutritional and environmental factors during the intrauterine period, with some of these environmental factors are endocrine disrupting chemicals (EDC) (*Barouki et al.*, 2012). EDC are natural or synthetic chemical molecules able to modify an organism’s operation of the hormonal system (*WHO*, 2015). In pregnant women these toxins can affect the embryo in number of ways because placenta does not block these synthetic chemicals and some cross placenta easily. Many diseases and disorders of children are associated with prenatal exposure of endocrine disrupting chemicals (EDC), including low birth weight (LBW) baby, premature delivery, autism, allergic disorders, pubescent development disorders and even Cancers are also a possible consequence. (*Veiga-Lopez et al.*, 2015). Measurement of endocrine disruptor levels in the umbilical cord blood of newborns is one of the important methods to determine intrauterine fetal exposure to chemical substances. Intakes of uncooked meat and fish containing Listeria by the pregnant mother can suffer with listeriosis. In turn it may result in preterm delivery.

**Effect of Alcohol Consumption on fetus**

Consumption of alcohol during pregnancy may result in abortion, fetal mortality and prematurity. Alcohol consumption during first five weeks pregnancy may harm embryos and fetus; such damage is referred to as fetal alcohol spectrum disorders (FASD) (*Thackray and Tiff*, 2001). Fetal alcohol spectrum disorders (FSAD) includes three different conditions such as fetal alcohol syndrome (FAS), alcohol related birth defects (ARBD), and alcohol-related neuro-developmental disorders (ARND). FASD includes changes in physical, mental, behavioral, learning abilities and inappropriate sexual behavior which may be irreversible. Other manifestation is Microcephaly, diminished brain growth and agenesis of the corpus callosum. Fetal alcohol syndrome (FAS) has a typical pattern of facial alterations, pre- and/or post natal growth restriction associated with evidence of structural and functional changes in CNS changes due to intrauterine alcohol exposure (*Goodlett and Horn*, 2001).

**Effect of Smoking on fetus**

Cigarettes smoking in pregnancy are one of the most important factor responsible for adverse outcomes in fetus and it represents the first major environmental risk of the unborn. Exposure to tobacco smoke is considered most harmful and it is associated with high rates of long and short term morbidity and mortality for mother and child. Newborns of tobacco smoke mother presented an average decrease in birth weight, birth length and a decrease in head circumference. Smoking cigarettes has a negative impact on the maternal and fetal genetic and cellular level (*Prins et al.*, 2012). It increases risk of congenital septal heart defects, fetal kidney disease associated with hypertension later in childhood or adult life, decrease pulmonary function in addition to wheezing, asthma and respiratory infections in offspring later in life, risk for various gastrointestinal defects, gastroschisis anal attresia, risk for infantile colic (*Chehab et al.*, 2012). Maternal smoking during pregnancy has also been linked with increase BMI in children (due to reduced height and increased amount of body fat) and risk for obesity in childhood and adult life. It decreases in the size of the fetal brain as well as to diminish general reasoning, visual-motor integration, verbal competence and language comprehension in the offspring (*Piper and Corbett*, 2012).

**Effect of Radiation exposure on fetus**

When abdomen of mother is exposed to radiation from outside her body referred to as prenatal radiation exposure. Radiation exposure in 1st trimester can lead to microcephaly, mental retardation and skeletal malformation.

**Effect of Physical and mental stress on fetus**

Physical and mental stress such as grief, shock, anger, excessive exercise, prolonged sitting etc. influences nutrition of mother and fetus as well as secretion of vasopressor hormones. This lead to IUGR, Preterm and more chances of LBW babies associated, gestational diabetes and congenital defects. It can also affect development of brain and might lead to behavioral disorder in childhood period (*Coussons-Read*, 2013).

**Effect of excessive coffee intake on fetus**

Caffeine is rich source of foods such as coffee, tea, soft drinks, chocolates and its excessive intake
increase chance of birth defect on fetus. Caffeine intake is negatively associated with low birth and placental weight, greater number of stillbirths, increased expression of apoptotic markers and altered placental and bone formation (Huang et al., 2012).

Effect of Mode of life on fetus

Abode

The abode of pregnant woman should be regularly fumigated and be free from mosquito etc. (Satyapal, 2008c).

Bath

Pregnant women should take daily bath with water boiled with specific drugs capable of suppressing Vata. (Pandey and Chaturvedi, 2005c).

Daily routine

Garbhini (pregnant women) should get up in the morning, worship the rising sun with in homage and pray in loud voice or move in fresh air with deep breathing.

Behavior

Garbhini (pregnant women) should be made to live in harmonious, happy atmosphere; behavior of everyone should be congenial and affectionate. The psychology of the mother influences the psychic development of fetus.

Mode of life which is harmful to fetus

Ayurveda believe that suppression of natural urges and use of non-congenial diet may also be responsible for teratological abnormalities such as weak (intra uterine growth retardation /low birth weight) and blind baby. Garbhini (pregnant women) should not move in dirty, foul smelling places; avoid wine and other intoxicants, smoking and excessive exercise etc. (Pandey and Chaturvedi, 2005b). Due to Ati-vyayama (physical activities or exercise in excess), Ati-langhan (excessive fasting), Ati-vyavaya (excessive indulgence). Ati-karshana (Excessive emaciation because of affliction of disease), Chinta Shoka Karshana (weakening due to excess stress, grief and worries) day sleep, Prayagara (remaining awake at night in excess) and Vegavidharana (suppression of natural urges) affect the different organs or body parts in a pregnant women by vitiating the relative dosha and that dosha will also affect the same body parts or organs of fetus (Singh, 2015).

In Atulyagotriya Adhyaya of Charak Samhita it has been clearly mentioned that marriages between two similar ‘Gotras’ should be avoided, otherwise it leads to congenital deformities in children. Besides these, during delivery bearing down or straining in absence of labor pains is contraindicated as it may cause deafness, dumbness, jaw-dislocation, cranial injury and other deformities (Shastri, 2005a).

Effect of non fulfillment of Dauhrida

Ayurveda describes that in 4th month of pregnancy mother consider as Dauhrida (one sense organ of mother and another of fetus). If pregnant mother is not having fulfilled desires during this period it can cause – distorted eyes or no eyes, Hump back, crooked arm and legs, mental retardation, dwarf, abnormality in sense organ, congenital abnormality and even death of fetus (Shastri, 2005c).

Drugs beneficial for maintenance of pregnancy (Garbhasthapaka dravyas)

Garbhasthapaka dravyas mainly counter the effect of substances which are harmful for fetus and pregnant women and help in the proper maintenance of the garbha. Ayurveda describes many Garbhasthapaka aushadhas in Prajasthapana mahakashaya such as Aintri (Bacopa monnieri), Brahmi (Centella asiatica), Satavriya (Asparagus racemosus), Sahrshavririya (Cynodon dactylon), Amogha (Stereospermum suaveolens), Ayatha (Tinospora cardifolia), Shiva (Terminalia chebula), Arista (Picrorhiza kurroa) Vatayupshi or Bala (Sida cardifolia) and Vishwasenkanta (Callicarpa macrophylla) (Pandey and Chaturvedi, 2005e). These Aushadhis (drugs) can be use orally by preparations of milk or ghee and cold decoction of these drugs for bath. Acharya Kasypa has advised that amulet of Trivrit (Opeculina tharpetum) should be tied in the waist of pregnant woman (Satyapal, 2008a). In present era many therapy such as music therapy, happiness in pregnancy, yoga, meditation etc. help to maintenance of pregnancy and better progeny.

How to live a Happy and Healthy life style during pregnancy

Music therapy in pregnancy

The infants of mothers exposed to music during pregnancy have significantly influences neonatal behavior. Many studies showed that 30 minutes music therapy per day for two weeks significantly reduced their stress, anxiety, and depression, when compared with participants who did not take music therapy (Brazelton and Nugent, 1995).

Happiness in pregnancy

Negative feelings and depression are common in pregnant women due to hormonal changes that affect their state of mind. Children of depressed mothers may experience a delay in cognitive development, such as language delays and even lower IQ. Many studies indicate that the happiness during the
pregnancy, the lower the chances of the baby facing mental and physical health challenges (Turka, 2017).

**Yogasana**

A way to maintain a healthy mind and body is prenatal yoga and meditation that create balance along emotional, mental, physical, and spiritual dimensions. Yoga is a complete system that uses physical postures (Asana) and breathing exercises (Pranayama). Yoga in pregnancy may be beneficial in improvements of stress levels, quality of life, autonomic nervous system functioning, and labor parameters such as comfort, pain, and tones the physical body, especially the pelvic floor, hip and abdominal core muscles, in preparation for the birthing process duration (Plakans, 2008). Yogasana in pregnancy reduces muscle cramps during third trimester, increases the flexibility of spine, tones up the lower body, improves digestion, relieves constipation, improves blood circulation, relieves physical stress and mental stress. Common Yogasana in pregnancy is Vrikshasan (Tree pose), Vajrasan (Thunderbolt pose), Matsyakridasan (Flapping fish pose) and Marjariasan (Cat stretch pose) etc.

**Effect of Pranayam (Breathing exercise)**

In Sanskrit, the Pranayama word is prepared by ‘Prana’ and ‘Aayama’. Here Prana means energy and aayama means the distribution of energy. Pranayam provides extra oxygen to every cell which energizes and rejuvenates, improves breathing capacity and increases stamina and vitality. It provides rich oxygenation to the blood and promotes a calmer mind and body. Anulom and Vilom is main pranayam which is practiced during pregnancy in each trimester. This involves inhaling from one nostril and exhaling through the other nostril. Anulom and Vilom pranayam is a process of inhalation, exhalation and retention. It provides more oxygen to the pregnant women and more oxygen is transferred to the fetus. Swastikasana and Vajrasana are the best Yogasana for practiced the breathing techniques. Yogasana and Pranayama is very effective in high risk cases of pregnancy also such as hypertension, asthma, Gestational Diabetes Mellitus, cardiac diseases and thyroid disorders. (Chandrakar et al., 2016).

**Meditation (Dhyana) in pregnancy**

Pregnancy is a wonderful state but it can also provoke intense anxiety. Some stress is normal and to be expected, but studies show that extended periods of stress may have a negative impact on your unborn baby. Meditation (Dhyana) is an integral part of yoga. Meditation calms stress of pregnancy. Meditation is proven to reduce stress and you can do it anywhere, anytime. It is a technique by which an individual trains the mind that promotes relaxation and builds internal energy. Main goal of meditation is to calm the mind, increase on focus and attain higher level of awareness. It helps us to achieve harmonious balance between body and mind (Kavya and Sharma, 2015).

**Yoga mudras in Pregnancy**

Yoga mudras are hand positions that practiced with the hands and fingers and help to motivate special energies in the body. Main meaning of Mudra is “seal,” “gesture,” or “mark.” Mudras can be very helpful in pregnant women to become calm and reflexes to the brain. Some examples of mudras that practice during pregnancy are Apana Mudra, Gyan Mudra, Aakash Mudra and Pushan Mudra etc. (Thakur et al., 2015) These mudras are very helpful in refining a deep bond between a Garbhini (pregnant women) and her baby in the womb. Yoga mudras are static postures which compress certain part of body thus redirecting the blood flow to other parts of the body. During second and third trimester of pregnancy time duration of Yogasana Pranayama and Yoga mudras should be reduced to prevent tiredness and overtax.

**DISCUSSION**

Detail about Garbhini ahara-vihara (Diet and life style of pregnant women) is very well documented in Ayurvedic classics starting from samhita period. Ancient Ayurvedic scholars discuss detail about the importance of women health for a healthy progeny. Garbhini Paricharya aims at excellence in the formation of the fetus, its development without anomalies, a secure full term normal delivery and maintenance of the health of the fetus. In this regard they divide whole Garbhini paricharya in three categories such as Masanumasik Pathya ahara and Vihara (Monthly dietary and activities regimen), Garbhasthapak karma (diet and activities for maintenance of pregnancy and better progeny) and Garbhopaghatakar bhavas (diet and activities which are harmful to fetus). Acharyas considers milk is an ideal product as a diet for pregnant women because it is a rich source of calcium, lactose and fat (Kajal, 2011). Milk help in relieving constipation which is common problem during pregnancy. In second trimester pregnant women mostly suffer from edema of feet and other complications of water retention. In 6th month Gokshura (Tribulus terrestris) is advised which act as good diuretic and prevent retention of water.
Normal and abnormal development of any body parts depends upon the mother’s diet, habits, exposure to external environments and other activities adopted by mother during pregnancy. In Ayurveda many Garbhopaghatakar bhavas (diet and activities which are harmful to fetus) described such as Atyayama (physical activities or exercise in excess), Aty-langhan (excessive fasting), Aty-vaayava (excessive sexual indulgence), Aty-karshana (Excessive emaciation because of affliction of disease), Chinta Shoka Karshana (weakening due to excess stress, grief and worries) day sleep, Prajagara (remaining awake at night in excess), Vegavidharana (suppression of natural urges) and not fulfillment Dauhrida desires (Tiwari, 1999). Smoking, alcohol consumption, radiation exposure and mental stress are very harmful to fetus. So, these are absolutely avoided during pregnancy from starting. Acharya Charaka and Kashyapa have described certain Garbhasthapaka drugs which are very helpful in maintenance of pregnancy successfully. Negative feelings and depression are common in pregnant women due to hormonal changes that affect their state of mind. Music therapy has been seen to reduce stress levels and negative feeling.

CONCLUSIONS

A main benefit of prenatal yoga is to tone the physical body, especially the pelvic floor; hip and abdominal core muscles, in preparation for the birthing process. Pranayam, Meditation and Yoga mudra is very effective in reduce pregnancy stress. Due to the stress and anxiety during the initial stages of labor, the body releases adrenaline delay the release of oxytocin (a compound which help in process of delivery). But if Garbhini practicing pranayama then during labour minimum release of adrenaline and proper release of oxytocin which make labour easier and smoothen. National population policy 2010 aims to provide 100% Antenatal Care which is currently received by only 44% of pregnant women in India. There is urgent need to include this plan in RCH (Reproductive and Child Health) program for maternal and fetal wellbeing. So that national goal may be achieved in more effective manner.

Conflict of interest

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Ethical approval

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