

Clinical Evidences of Ayurvedic Contraception

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ABSTRACT

As per demography study population is not static but is always in a dynamic state because of deaths, births, and migration factors. The total world population is estimated to be 8 billion in November 2022. It is now increasing at a much faster rate of 1 billion per year. India's population has reached 1.1417 billion 2022. India would be the world's most populous country exceeding that of China. The rapid increase of population has got an adverse effect on the national economy. The aim of family welfare planning is to bring down population growth, so as to ensure a better standard of living and improve health, education and economic opportunities. Contraception is the act of preventing conception. This can be a devices, medication, procedures or behaviors for male and female both. Various side effects have been observed with modern contraceptive methods so for that we need to find out alternative option to overcome modern contraceptives side effects. In *Ayurvedaacharyas* mentioned various methods like local and oral medicinal yoga as a *Garbhanirodhak*. For the exposes of clinical evidences of *Ayurvedic* Contraception to gather *Ayurvedic* research and textual references on *GarbhanirodhakDravya* and methods, which would be proving that *Ayurvedic* Contraceptives methods also have better and safe result

Key Words *Contraception, Popultaion, Garbhanirodhak Dravya, Conception, Clinical studies*

Received 25th July 23 Accepted 18th September 23 Published 10th September 2023

INTRODUCTION

As per demography study population is not static but is always in a dynamic state because of deaths, births, and migration factors. The total world population is estimated to be 8 billion in November 2022. It is now increasing at a much faster rate of 1 billion per year. India's population has reached 1.1417 billion 2022¹. India was the second-most populous country with a population of over 1.3 billion. However, population trends can change over time due to various factors such as birth rates, mortality rates, and migration. The

rapid increase in population has negatively impacted the national economy. Contraception refers to the deliberate use of various methods or techniques to prevent pregnancy or conception from occurring as a result of sexual intercourse. This can be devices, medication, procedure or behaviour for male and female both. In *Ayurveda* the process of conception is described through a conceptual framework involving various factors. These factors are believed to play crucial roles in the successful conception and development of a healthy foetus.

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Here's a brief explanation of each of these factors:

1. Kshetra - The female reproductive system as the field: Kshetra refers to the female reproductive organs, including the uterus, fallopian tubes, and ovaries. These organs are considered the field where conception takes place and where the fetus grows during pregnancy.

2. Ambu - The nutrient fluids: Ambu represents the nutrient-rich fluids present in the female reproductive system. It is believed that these fluids nourish and support the sperm and ovum during fertilization and early stages of development.

3. Bija - The sperm and ovum: Bija refers to the male sperm and female ovum (egg), which are considered the seeds of life. The successful union of these two components leads to fertilization and the formation of an embryo.

4. Rutukal - The ideal ovulatory period: Rutukal is the ideal ovulatory period, also known as the fertile window, during a woman's menstrual cycle. It is the time when the ovary releases a mature egg, and it is the most favorable time for conception to occur.

5. Marga - The female canal: Marga refers to the female reproductive canal, including the vagina and cervix. It serves as the passage for sperm to travel from the external environment to reach the ovum within the reproductive system.

6. Vayu - The neural system: Vayu represents the neural system, which includes the nerves and pathways responsible for transmitting signals between the brain and various parts of the body,

including the reproductive organs. A well-functioning neural system is considered important for the proper functioning of the reproductive system.

7. Hriday - The psychological status: Hriday refers to the psychological status of both partners involved in the conception process. Emotional well-being, stress levels, and mental health are believed to influence fertility and the overall process of conception.

Any more of these factors if influenced artificially can lead to a failure of conception and these methods are called *Garbhanirodhak* in Ayurveda².

Aim & Objectives:

- To bring down population growth, so as to ensure a better standard of living and improve health, education and economic opportunities.
- To gather *Ayurvedic* research and textual references on *garbhanirodhakdravya* and methods for the exposes of clinical evidences of *Ayurvedic* contraception.

Methodology:

Modern Methods to Control Fertility:

Several methods used to curb for contraception according to WHO are³

Table 1 Contraceptive methods

1. Long acting Reversible Contraception

Explanation	Methods	Contraception
Intrauterine (Hormonal,Copper) Implants		Increase Thickness of Cervical Mucous to Block Sperm and ovum meeting and prevent Ovulation

2. Hormonal Methods

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Combined Contraceptives Mini pill Injections	Oral	Prevent the Release of Eggs from the ovaries (Ovulation)
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3. Barrier Methods

Condoms, Spermicides, Cervical cap	Sponges, Diaphragm,	Forms barrier to prevent sperm and ovum from meeting
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4. Emergency Contraceptives

Emergency pills	Delays the Ovulation
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5. Sterilization

Tubal ligation, Vasectomy	Ovum blocked from meeting sperm Keeps sperm out of ejaculated semen
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6. Natural Methods

Withdrawal method Calender method Lactational Amenorrhea	Avoid eggs meeting
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These devices, techniques, and drugs seem to have been efficiently practiced for contraception but with many reported adverse effects as well as failure resulting in unwanted pregnancy. Commonly used synthetic or prescribed hormonal drugs can have various effects on the endocrine system, and in some cases, they may be associated with adverse health outcomes. These may cause polycystic ovarian disorder, endometriosis, early puberty, and infertility, toxicity to gonads, testicular germ cell cancer, breast or prostate cancer even birth defects (teratogenic effect)^{4,5}.

The *Ayurveda* is alternate and safer methods/drugs to overcome the modern side effect and prevent Reproductive health.

Ayurvedic Method: GarbhaNirodhak

In *Ayurveda Acharyas* have elaborated the subject of reproduction extensively but there are no direct references to Contraception.

By the 11th century the oriental connectivity that had sociocultural affects also brought in practices to prevent conception or induce abortion. References to oral and local contraceptives are found in Bruhad Yoga Tarangini and RatiRahasya [AD800], RasaPrakashSudhakar [AD1300], Panchasayaka, Smaradeepika and RasaRatnaSamuccchay [AD1400], RatiManjiri [AD1500], Kandarpchudamani [AD1577], AnnangaRang, Bhavprakash and YogaRatnakar [AD1600], YogaRatnaSamucchaya [AD 1800], and BrihanNighantuRatnakar and BhaishjyaRatnavali[AD 1900]⁶.

Contraception in the context of Ayurvedic principle of fertility:

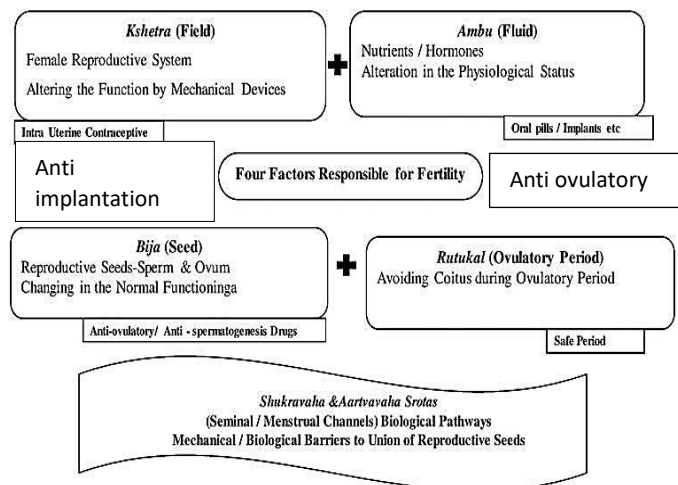


Figure 1 Factors responsible for Fertility

GarbhaNirodhak Methods:

1. Local Contraceptives for Females/ Spermicides⁷

Vaginal fumigation or application before coitus with

- (1) Moistened *Saindhavalavana* (Rock salt) with *Til* (Sesame) oil.
- (2) Wood of *Neemdhupan* (*Azadirachta indica*) before coitus and after *rutukal*.

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(3) Powdered root of *Dhattura* filling into vaginal canal before coitus.

There is no chance of conception to the women having coitus after tying the waist the root of *dhattura* which is uprooted on 14th day of 1st fortnight of lunar month, once she removes this root she conceives. (IUD/Sterilization).

2. Oral Contraceptives/ Anti implation or Anti ovulatory or Anti fertility⁸

1) Powder of *Pippali* (*Piper longum*) and *Vidanga* (*Embeli aribes*) with *Tankana* (*Borax*) taken in equal quantity in fertile phase with milk.

2) Flowers of *Japa* (*Hibiscus rosa-sinensis*) with *Kanji* (fermented drink) along with 48 grams of old jaggery to be taken for 3 consecutive days in the fertile phase.

3) Root of *Tanduliyaka* (*Amaranthus spinosus*) with *Tandulodaka* (rice water) to be taken after menstruation for 3 consecutive days.

4) Powders of *Talisapatra* (*Abies spectabilis*) and *Gairika* (Red Ochre, Fe_2O_3) in equal parts to be consumed on the 4th day of menstruation with water.

5) Powders of *Amla* (*Phyllanthus emblica*), *Arjuna* (*Terminalia arjuna*), and *Abhaya* (*Terminalia chebula*) with water.

6) Paste made of the root of *Chitraka* (*Plumbago zeylanica*) mixed with *Nirgundi* (*Vitex negundo*) juice given orally in the dose of one 12 gm with honey.

7) Powder of seeds of *Sarshapa* (*Brassica rapa*) with *Tanduliyam* (*Amaranthus spinosus*) and *Sarkara* (Sugar candy) pounded with *Tandulodaka* (rice water) given with milk.

8) Ashes of *Sehund* stem (*Euphorbia neriifolia*), 12g daily.

9) Rhizome of *Haridra* (*Curcuma longa*) daily during the 3 days of menstruation followed by an additional 3 days.

10) Powders of *KrishnaJeeraka* (*Carum carvi*), *Karchooram* (*Hedychium picatum*), *Nagakesara* (*Mesua ferrea*), *Haritaki* (*Terminalia chebula*), *Kalonji* (*Nigella sativa*), and *Kayaphala* (*Myrica nagi* Thunb.) made into pills in the size of ziziphus fruit for 7^o days.

Contraceptives for Male⁹:

1) *Arka* – Antispermatic

2) *Tulsi* – 2gm daily act as destroy amount and mobility of sperm

3) *Haridra* – Decrease the mobility of sperm.

Clinical Studies:

Some of the plants that have demonstrated interesting antifertility activity in clinical trials are as follows.

1) *Vidang* (*Embelia ribes*)

Single drug was administered in a dose of 2g for 5 days followed by 1g daily for another 10 days. After observing the effect on 2051 cycles in 45 women over 4 years, it was reported that the plant protected 95% of women from pregnancy¹⁰.

2) *Japapushpa* (*Hibiscus rosa*)

Red petals of the plant *Rudrapushpaka* collected between October and December. The extract was administered to 30 sexually active women at a dose of 750mg/day from day 7 to day 22 of the reproductive cycle. It was observed that no one had become pregnant¹¹.

3) *Neem* oil

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A study was conducted on neem seed oil as local application for the reproductive female (246 women in the fertile age-group, 4 dropped out) as a method of family planning for a period of 12-36 cycles. In nine cases, there was conception due to drug failure and in four cases, there was conception due to drug omission. Neem seed oil may be used as an external barrier as a cost effective herbal contraceptive for its spermicidal property and is considered safe for regular use⁴.

4) *Arandbija* (*Ricinus communis*) /Emergency contraceptive

The seeds of *Ricinus communis* administered as a single oral dose of 2.3-2.5 g once/12 month sacted as protection against pregnancy in 50 women volunteers. The study revealed very minimal side effects. The antifertility and contraceptive efficacy of is due to hormonal mechanisms stated that one seed of *Ricinus communis* taken orally can prevent ovulation in humans and the anti conception effect may be due in part to the prevention of ovulation⁴.

5) Contraceptive activity of *Talispatra* and *Gairika* , Two Group study¹²

1st group – Mixture of talispatra and gairika (10gm) with cold water was administrated on 4th day of menstrual cycle single dose for 3 cycles.

2nd group - Tab Mala D daily one from 5th day of menstrual cycle for 21 days for 3 cycles.

Result - Mixture of *Talispatra* and *Gairika* (10gm) shown significant contraceptive activity so due to its combined effect of anti-ovulatory, anti-implantation, uterine contractor it may acts as a contraceptive.

6) Compound Formulation

A study was conducted on a combination of *Ashoka* (*Saraca indica*), *Vidanga* (*Embelia ribes*), *Laksha* (*Iac*), and *Kramuk* (*Areca nut*) on 834 young, healthy patients in active reproductive age below 40 years. The drug was administered from the 5th day of LMP for a period of 15days in a daily dose schedule of 1gm (2 tablets) at bedtime with milk. Results suggested that the failure rate of treatment 1.19/HWY is comparable to both steroidal oral contraceptive pills and intrauterine device. It does not affect the hypothalamo-pituitary axis and did not have any other adverse effects. It can be a good alternative for lactating women.

7) Central Council for Research in Ayurveda and Siddha had taken up a number of studies to evaluate the efficacy of Ayurvedic formulations like K Capsule, Ayush AC-IV, Pippalyadi yoga (in three different doses), Ayush AC I, *Talisadiyoga*, *Vidangadiyoga*etc., which were proved as safe and effective in different clinical studies. Besides this, the council also tried the efficacy of nee oil-as a local contraceptive and found encouraging results.

DISCUSSION

Research into novel contraceptives from Ayurvedic sources is indeed an area of interest, given the concerns related to the potential adverse effects of synthetic contraceptive drugs. The objectives of such research would revolve around ensuring the effectiveness, safety, and

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user compliance of these Ayurvedic origin contraceptive drugs and methods. Here are some potential objectives for conducting research on Ayurvedic contraceptives: Efficacy Studies, Safety Assessments, Hormonal Effects, Reproductive and Neurological Effects, Developmental and Metabolic Effects, Mechanism of Action, Formulation Development, Pre-clinical and Clinical Trials, Comparative Studies, User Acceptability and Compliance, Ethical Considerations. It's essential to conduct rigorous research in this area to provide evidence-based alternatives for contraception that are safe, effective, and culturally acceptable. Ayurvedic medicine has a long history of use, and investigating its potential as a source of contraceptives could offer promising alternatives for individuals seeking non-synthetic options. However, it's crucial to follow scientific protocols and regulatory guidelines to ensure the validity and safety of such research.

CONCLUSION

Ayurveda, as an ancient system of medicine, has a rich history of promoting holistic health and well-being, including aspects related to fertility and contraception. While modern medicine has made significant advancements in these areas, there is indeed potential to revive and stimulate new Ayurvedic research programs and projects on Garbhanirodhak (contraception) to complement existing knowledge and provide

alternative options for individuals seeking contraception and improved reproductive health. In Ayurvedic research on Garbhanirodhak has the potential to offer additional contraceptive choices and improve reproductive health, but it should be carried out with scientific rigor and in collaboration with modern medical experts to ensure safety and effectiveness.

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