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Review Article

THE ANTI-FERTILITY ACTIVITY OF MEDICINAL PLANT ON MALE AND FEMALE REPRODUCTION

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ABSTRACT

The nature has different sources of medicinal plants from the origin of the earth these medicines are used different ways from Vedas kaal through the physician and several modern drugs have been isolated from a natural source. Caraka writes medicinal property of plants and uses their part in the treatment of diseases, plants as abortifacient and as well as contraceptive, whereas sushruta is known as the father of surgery he also has known the medicinal property of the plant. The knowledge of plants in medicine well known from the year-ago. More than 35,000plant species are being used in various medicinal purposes and many are in discovered ways. Various medicinal plant extracts have been tested for their antifertility activity both in male and female animal models and their active agents. These plant-based medicines are an alternative source and have no side effect for the one don't want to take chemically synthesized medicine.

KEYWORD-Veda, Caraka, Sushruta, abortifaicent, contraceptive

INTRODUCTION

When we get the connection between coitus and pregnancy the issues of birth control began.-probably methods of contraception (aside from avoiding vaginal intercourse) are coitus interrupts lactation, certain barrier methods and herbal methods (abortification). Coitus interrupts (withdrawal of the penis from the vagina before ejaculation. modern research has shown that pre-ejaculate fluid does not contain viable sperm). There are historic records of Egyptian women using pessary (a vaginal suppository) made of various acidic substances and lubricated with honey or oil, which may have been somewhat effective for killing sperm. Asian women may have used oiled paper as a cervical cap and Europeans may have used beeswax for this purpose. Various methods are used to prevent pregnancy throughout the history of humans some of them were effective some were not.

As we know our earth covered 71% water 29 % for land, in 29 % land may of life our lives one of the humans are one .The world population is approx 7.8billion and these populations is increased day by day .the uncontrolled population is major issues in developing countries as compared to developed countries .china is a largely populated country after that India it is believed that till 2025 the population of India will exceed the china .these uncontrolled population growth in India have following reasons like. Education, early marriage (marriage age for boys 21 years and girl 18 years) wealth, social issues, improper knowledge about sex no direct link between the hospital and people mainly in ruler areas. When India got independent in 1947 its population was 44core but now in 2020 it reached to 1billion 24 cores approximately. In the region of Prime Minister Rajiv Gandhi a slogan was famous hum do humare do, it was successful for some time but unfortunately it was failed due to many reasons.

Antifertility

It is defined as a failure to achieve clinical pregnancy after12 months or more of regular unprotected sexual intercourse in mature age having normal coitus during the appropriate period of the menstrual cycle. Antifertility drugs are chemical substance who suppresses the action of hormones that promote pregnancy. These drugs are made up of derivatives of synthetic progesterone or a combination of estrogen and progesterone. When the progesterone pills are taken, the mucous in the cervix gets thickened which makes difficult for sperm to enter the uterus and fertilize the egg and reduce the chance of pregnancy. Norethindrone is synthetic progesterone that is one the most commonly used as anti fertility. Ethynylestradiol is a combination of estrogen and progesterone.

Their benefits cause no interference in sexual activities and the risk of pregnancy is reduced. This might cause a reduction in menstrual bleeding. Demerits now a day's much synthetically modern medicine are available to control fertility, but it is very important to have knowledge about taking this medicine. It is 70-90% efficacy depends upon the use of methods. Some time these chemical medicines are the reason for cancer, ectopic pregnancy (other than the uterus) alteration of the menstrual cycle, behavior, depression, weight gain etc.

Some other problems like diet, smoking, alcohol, excess body weight, other substance abuse environmental factor, family medical history, infertility are usually because of the low number of poor quality of sperm in men whereas in women she is not able to produce eggs regularly due to fallopian tube damage or blocked and sperm cannot reach her eggs. Nature has been a source of medicinal plant, there extract are used in modern medicine for many years. Many test reach of medicinal drugs shows the anti fertility activity, plants are used as anti-implantation, an abortifacient and as a contraceptive as well known in the ancient physicians of India but they are not equally effective to synthetically prepared contraceptive, but it is alternative for women who want to try different ways. Herbal contraceptives need to be taken regularly to maintain the contraceptive effect, So the Barrier method should be employed.

The three main routes to preventing or ending pregnancy--prevent the mating of a sperm cell to ovum (contraception). The prevention of implantation of the blastocyst (contraception). Chemical or surgical induction of abortion of the developing embryo or later fetus. Surgical cut both male and female.

Birth control-

Birth control is divided into six methods

Physical method - preventing the sperm from entering the female reproductive tract, surgically alternating the male or female reproductive tract to induce sterility.

Barrier method-male condom, a latex or polyurethane sheath placed over the penis .it is also available in the female version.

Hormonal method - composition of progesterone or estrogen and progesterone.

Intrauterine method- these are contraceptive devices that are placed inside the uterus.thy are usually shaped like‘T’ the arm of T holds the device in place. Two types –those which contain copper (which has a spermicidal effect) and those that release a progestogen.

Sterilization-tubal ligation for women vasectomy for men.

Behavioral methods- regulating the timing or methods of intercourse to prevent the introduction of sperm into the female reproductive tract.

Mechanism of birth control:

The mechanism of action of hormonal contraception is primarily through the suppression of ovulation. Progestational effects include:

1. Inhibition of ovulation by suppressing luteinizing hormone (LH).
2. Thickening of cervical mucus, thus hampering the transport of sperm.
3. Possible inhibition of sperm capacitating.
4. Hampered implantation by the production of casualized endometrial with exhausted and atrophic glands.
5. Partial inhibition of ovulation in part by the suppression of follicle-stimulating hormone (FSH) and luteinizing hormone (LH), depending on the dose.

6. Alteration of secretions and cellular structures of the endometrial within the uterus.

To control the population, the World Health Organization (WHO) has started a program that includes been developed and practiced to date but they did not meet the demand of developing countries as they are chemical based, expensive, sophisticated and have some side effects.

Methodology

This information was carried out by analyzing classical text and reference books, articles, and peer-reviewed papers, as well as a thorough consultation of worldwide accepted scientific databases. We performed CENTRAL, Embase, and Ayush searches using terms such as "ant fertility", "anti-implantation", "an ovulation", and "anti-spermatogenic" activity of plants.

Table No.1 Medicinal plants exhibiting antifertility activity in female

SR NO.	Plant name	*family*	Part used	Solvent used	Chemical constituents	Activity	References No.
1	*Abruspre catoniusli nn.*	*fabaceae*	Whole plant	ethanol	Alkaloids,steroids,fix edoil,anthocyannins	Abortifa cient activity	1
2	*Acacia leucophpl oearoxb*	*fabaceae*	root	alcohol	Tannine,phenol,protei n	Ant fertility activity	2
3	*Aegle marmelos linn*	*rutaceae*	leaves	Aqueou s&alco hol	Alkeloids,terpens steroids	Abortifa cient activity	3
4	*Butea monosper ma lam*	*fabaceae*	Whole plant	methan ol	Stigmosterol,flavonoi ds ,amino acid	Inhibit ovulatio n	4
5	*Careyaar borearox b*	*lecythida ceae*	root	methan ol	Phyto-estrogens,sito-sterol	Anti fertility activity	5
6	*Cissampe lospareir alinn.*	*manisper macea*	Whole plant	ethanol	Alkaloids,chalconefla vone	Antioest rogenic activity	6
7	*Citrus medicalin n.*	*rutaceae*	Fruit peel	Ethanol &	Citroflavanoids,glyco side,triterpenoids	Anti fertility activity	7

				chloroform			
8	*Curcuma longa linn.*	*zingiberaceae*	rhizomes	Ether,alcohol,propylene glycol water	Curcumin,flavonoids	Antiostrogenic activity	8
9	*Cyperusrotundus*	*cyperaceae*	rhizome	ethanol	Flavanoids,	Estrogenic activity	9, 10
10	*Hymenocardiaacidatul*	*euphorbiaceae*	Stem bark	ethanol	Triterpenoids,dlycosides	Decrease leveled Ant fertility activity	11
11	*Mesuaferrea*	*calophyllaceae*	flower	ethanol	Sitosterols,alkaloids	Anti implantation activity	12
12	*Ocimumgratissimumlinn.*	*caesalpiniaceae*	stems	acetone	Anthraquinones,flavanoids	Contraception activity	13
13	*Plumbagorosealin n.*	*plumbasinaceae*	leaves	Petroleum ether,chloroformethanol,acetone&water	Sitosterol,glycosides,tannins,fatty acids.	Anti fertility activity	14
14	*Phallanthusamarus*	*Euphorbiaceae*	Whole plant	methanol	Steroids, dig toxin	Contraception activity	15,16, 17

15	*Woodfordiafruticosa*	*Lythraceae*	flower	Alcoholic extracts	Phenolic compound ,steroids	Ant implantation&aborification activity	18

Table No.2 Medicinal plants exhibiting antifertility activity in male

SR NO.	Plant name	family	Part used	Solvent used	Chemical constituents	Activity	Reference No.
16	Abrusprecatorius	fabaceae	seed	ethanol	Alkaloids, steroids,fixed oil, anthocyannins	Reduce sperm mortality and density, antisperatogenic effect and ant androgenic effect	19,20, 21,22
17	Aegle marmelosa corr	Rutaceae	Whole plant	Aqueous&alcohol	Alkaloids,phenolic compound	Inhibit spermatogenesis &sperm mortality	23,24
18	Acacia caesia	fabaceae	fruit	alcohol	Tannine,phenols,proteins	Immobilization of sperm	25
19	Albizialebbek corr	fabaceae	Pod bark	Petroleum ether	Amino acid,theronine serine ,glumatic acid	Ant fertility activity	26,27

20	Aloe barbadensis	Lilaceae	leaves	ethanolic	Glycoside,emodineanthraquinone	Ant androgenic activity	28
21	Andrographhispaniculata	Acanthaceae	leaves	methanol	Flavonoids,diterpeoids	Antispermatogenic &ant androgenic activity	29,30
22	Azadirachtaindica	Meliaceae	seed	Ethanolic	Flavonoids,saponins, phenol	Ant androgenic effect, spermicidal activity	31,32
23	Calotropis prosera	Asclepiadaceae	root	Ethanolic	Alkaloids,saponis cardiac glycoids,	Antispermogenic effect	33
24	Cannabis sativa linn .	cannabaceae	leaves	Alcoholic	Terpenoids,tannine,reducing sugar	Testicular lesions	34
25	Caricapapyalinn.	Cariaceae	fruit	isopropanol	Guangxiense,triterpenoids,	Antispermatogenic activity	35
26	Cinnamomumcamphora	Lauraceae	seed		Eucalyptol,camphorterpinol,eugenol	Inhibition of spermatogenesis	36
27	Cuminumcymimumlinn.	Apiaceae	seed		Gamma-terpins,cuminaldehyde,antioxidant	Antispermatogenic effect	37
28	Desmodiumgangeticum	Fabaceae	Whole plant	ethanol	Flavanoids,alkaloids, genisteine	Ant fertility activity	38

29	Embelicaribes burn	Myrsinaceae	berry	Aqueous extract	Protein,tannine,saponine,embelin,alkaloids	Spermicidal activity&ant fertility activity	39,40
30	Euphorbia nerifolia	Euphorbiaceae	roots	Hydroalcholic	Triterpenoids,euphol,euphorbolantiquorine	Antispermatogenic effect	41
31	Glorisa superb linn.	Liliaceae	tuber	Hexane extracts	Colchicines,saponins alkaloids.	Shrinkage of somniferous tubule	42
32	Gossypiumherbaceum	Malvaceae	seed			Reduced sperm density	43

CONCLUSION: This review summarized scientifically proven literature about photochemical constituents, anti fertility activities and type of extract used of various herbal medicinal plants for the both males and females which is traditionally used. The present review also covered animal models used to explore the anti fertility activity of the above-mentioned plants. These herbal medicinal plants act as ant fertility agents via various mechanisms in both males and females. Future research is also required to prepare these herbal plants carefully to make them safe and effective.

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