

A Review on Protective Action of Herbal Drugs Against Fall-Off Libido Due to Chronic Use of B-Blockers(Propranolol)

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ABSTRACT: From the ancient times human have always tried to correct the sex related problems from various herbal medicinal plants and their extracts with various dosage forms. The history of sex therapy is very old and herbal drugs have been the great reliever as the sex therapy from the evolution of human. Instead of the current scenario with the synthetic compounds the herbal drugs are far more safe and comparatively effective without any serious side effects.

Antihypertensives such as β -blockers can cause the side effects which are responsible for the diminished quality of life. The chronic use of such drugs can be more fatal in some cases than their actual gain. Several sexual problems can occur such as erectile dysfunction, loss of libido, ejaculation disorders etc. The phytochemicals found in the plants which are having aphrodisiac properties shows sildenafil like effect on human body without the side effects of synthetic compound. The pharmaceutically active compounds found in natural aphrodisiacs such as flavonoids, saponins, free amino acids and vitamins are known to be libido enhancer and hence useful in treating sexual disorders. The natural aphrodisiacs can be derived from any source including medicinal plants, vegetables, flowers, roots or fruits and their pharmacological potential varies as per the part of the plant used.

The target of this review article is to deliver information about medicinal plants for the protective action against fall-off libido due to chronic use of β -blockers and to investigate for further secondary phytochemicals for aphrodisiac potential.

Keywords: *Libido, Aphrodisiacs, β -blockers, Phytochemicals.*

INTRODUCTION:

Aphrodisiacs are the substances which are used to increase sexual activity and help in fertility. Sexual feelings are an inevitable part of life. The basic and fundamental purpose of sex and sexuality is the “continuation of progeny” and the survival of human race.^[1]

Infertility is a worldwide medical and social problem. It affects above 10-15% of married couples. WHO estimates that there are 60-80 million infertile couples worldwide. Infertility in itself may not threaten physical health but it can certainly have a serious impact on the mental and social wellbeing of infertile couple.^[1]

Herbal medicine plays an important role in rural areas, and several locally produced medicines are still used as home remedies for different ailments. The increasing use of traditional therapies requires stronger scientific evidence for the underlying principles of therapies and for the efficacy of drugs. Herbal medicine remains the mainstay of around 75% to 80% of the world's population, mainly in developing countries, for primary health care due to better cultural acceptability, better compatibility with the human body and fewer side effects. Furthermore, traditional knowledge is the most affordable and accessible method available for the treatment of various diseases.^[2]

Erectile dysfunction, sometimes, which also may imply to refer to “impotence,” is the repeated inability to get or keep an erection firm enough for sexual intercourse.^[3] On the other hand Coronary arterial diseases are one of the increasingly common chronic diseases around the worldwide. Both selective and non-selective adrenergic receptor blockers, especially selective β_1 -adrenoceptor antagonists, are often used to treat cardiovascular disease, even when complicated by chronic obstructive pulmonary diseases.^[4]

Propranolol is a β_1 - β_2 selective receptor blockers. Most studies revealed that propranolol had a histopathologically toxic effect on the testis. Animal model studies showed that propranolol could involve degeneration, necrosis, fibrosis, hypocellularity in germinal epithelium and dystrophic calcification in seminiferous tubules. It is considered that beta blockers impair spermatogenesis via β_2 -receptors. eventually it could cause some sort of sexual dysfunction if taken chronically.^[5-6]

Sexual dysfunction has a high prevalence among hypertensive men.^[7-11] Symptoms of dysfunction include reduced libido, inability to obtain or maintain an erection (impotence), and premature or retarded ejaculation. These symptoms are frequently first reported by patients while receiving antihypertensive therapy, which has lead to a widespread belief that sexual dysfunction is caused by a specific hypotensive agent rather than by hypertension itself.^[12]

β -adrenoreceptor blocking drugs have been reported to cause sexual dysfunctions for men. On the other hand, systematically growing evidence from more recent studies shows no co-relation between β -blocker therapy and sexual function in male patients.^[13-15]

NATURAL SOLUTIONS WITH APHRODISIAC POTENTIAL :

Plants with aphrodisiac potential have been used to synthesize many formulations but the phytochemicals present in the plants serves the purpose with less side effects than the synthetic derivatives currently used in the market. Various plants material are well known for their aphrodisiac activity and provides the alternative treatment for sexual dysfunction. Some of the plants having aphrodisiac phytoconstituents are mentioned in below table -

Table no. 1 Showing the List of Plants with Aphrodisiac Potential

Sr. no.	Plants	Family	Common name	pharmacology	Mech of action	Chemical constituents	References
1	<i>Allium sativum L</i>	Liliaceae	Garlic	The alcoholic extract of <i>A. sativum</i> increased sexual behaviour through the activities of sulfated compounds, peptides, flavonoids and phenolics	Allicin increases blood flow to sexual organs through nitric oxide synthase	Peptides, steroids, terpenes, flavonoids, volatile oils and vitamins	[16],[17]
2.	<i>Alpinia galangal L</i>	Zingiberaceae	Galangal, blue ginger, Thai ginger	Methnaolic extract of <i>A. galangal</i> showed increase in serum testosterone levels at 300 mg/kg/day	-	Coumarin, terpenoids, flavonoids, volatile oils, Phenols	[16],[17]

3	<i>Anacardium occidentale</i> L.	Anacardiaceae	Cashew	In a study to determine the aphrodisiac activity of the oils from <i>Anacardium occidentale</i> L seeds and shell, the result showed significant increase in sexual parameters	-	Carbohydrates, phenols, flavonoids, steroids, proteins	[16],[17]
4	<i>Cannabis sativa</i> L	Cannabaceae	Marijuana, hemp	In India's ayurveda and Chinese unani medicine, Cannabis is used to overcome impotence and raise libido and as a general cure for the disease.	-	Cannabinoids, Phenol, alkaloid, flavonoid, volatile oils	[16],[17]
5	<i>Chlorophyllum borivilianum</i>	Liliaceae	Safed Musli	In a study of the aqueous extract of dried roots of Safed Musli in rats, there was increase in libido, sexual vigour and sexual arousal at 250 mg/kg. The study supported treatment of premature ejaculation and oligospermia	The chemical structure of stigmasterol is related to that of testosterone and mainly contributes to its aphrodisiac potentials; hecogenin produces anabolic hormone	glycosides, saponins, fatty acids, hydrocarbons	[16],[17]

6	<i>Citrullus lanatus</i> (Thunb.) Matsum. & Nakai	Cucurbitaceae	Water Melon	The effect of red watermelon flesh extract on male sexual behaviour has been determined. In the research, the suspension of the flesh extract was administered on doses 100, 500 and 1000 mg/kg to different groups of male rats (n=5) daily for 22 days. The result showed that oral administration of watermelon flesh extract caused significant increase in mounting frequency, intromission frequency and ejaculatory latency. Watermelon flesh extract did not produce undesirable side effects on the male rats and thus its short term use is apparently safe	Citrulline improves blood drive to the genital regions and plays a significant role in the relaxation of blood, a major tool in high sexual performance	Carotenoids	[16],[17]
7	<i>Myristica fragrans</i> Houtt	Myristaceae	Nutmeg	50% ethanolic extract showed significant increase in aphrodisiac properties in mice	Stimulation of the nervous system by myristicin	Essential oils, fixed oils, unsaturated aliphatic hydrocarbon	[16],[17]

				such as increase in mating frequency, libido and potency. It has also been used in Unani medicine for the treatment of sexual disorders			
8	<i>Passiflora incarnate L.</i>	Passifloraceae	Passion flower	The aphrodisiac effect of the methanolic extract of <i>P. incarnate</i> L has been determined in mice. The result showed significant aphrodisiac properties in male mice at all doses- 75, 100 and 150 mg/kg with 100 mg/kg having the highest activity		Phenolics, alkaloids, sugars	[16],[17]
9	<i>Pedaliium murex L</i>	Pedaliaceae	Caltrops, Gokhru	In a study against ethanol induced infertility in male rats 200 mg/kg and 400 mg/kg of petroleum ether extracts showed significant increase in mating, mounting behaviour, total body weight, sperm motility and percentage of pregnancy	increase in sexual behaviour	Saponins, flavonoids, amino acids and fatty acids	[16],[17]

10	<i>Mucuna pruriens L</i>	Leguminosae	Devil beans	In different texts of ayurveda, <i>M. pruriens</i> is most commonly used in aphrodisiac formulations. At 70 mg/kg, treatments significantly improved testosterone quality, ameliorated psychological stress and improved sperm count	Producing a dose-dependent increase in follicle stimulating hormone and leutenizing hormone which increases the number of eggs released at ovulation by the action of L-DOPA and dopamine	Alkaloids, amino acids, saponins, vitamins	[16],[17]

CONCLUSION:

Nowadays there are more and more interests worldwide taken in herbal medicines accompanied with increased laboratory investigations into the pharmacological properties of the bioactive ingredients and their ability to treat various diseases. The present review has accentuated on the effects of Natural aphrodisiacs, the aphrodisiac phytoconstituents present in the plants, the various biochemical estimations and several in-vitro, in-vivo and human studies. The brief survey of literature evidences shows us that the traditional herbal therapies have no known side effects in the presence of aphrodisiac phytoconstituents in plant extracts.

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