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A Review on Erectile Dysfunction with special reference to *Gokshura* (*Tribulus terrestris*)

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ABSTRACT

Erectile dysfunction can be a sign of a physical or psychological condition. It may cause relationship strain, stress and low self-confidence. This is characterised by man's inability to get or keep an erection firm enough for sexual intercourse. Patients suffering from erectile dysfunction should first be evaluated for any underlying physical and psychological conditions. Erectile dysfunction, also known as impotence, is defined by difficulty getting and keeping an erection. It can be an embarrassing thing to talk about. It's been reported that more than half of men between the ages of 40 and 70 experience some type of ED

Vajikarana chikitsa is a one of eight major specialty of the Ashtanga Ayurveda, which is concerned with aphrodisiacs, vigor and improving health of progeny. According to Charaka Samhita, by proper use of these formulations, one becomes blessed with good physique, potency, strength, and complexion and sexually exhilarated and sexually potent. This in turn is helpful in several common sexual dysfunctions.

Effect of *Tribulus terrestris* has been proved in increasing the testosterone levels and rejuvenation of sperm count.

Key Words

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INTRODUCTION

Ayurveda is science of life. Human beings have four objectives in life - Dharma, Artha, Kaama and Moksha which are collectively called as 'Purusharth Chatushtya'¹. We require a healthy mind and body to achieve purusharthas . In today's scenario, very few follow the schedules as described in Ayurveda science and due to unbalanced living style majority of population is suffering from physical issues like Erectile dysfunction. In various stages of sexual response, the most important is achieving of normal erection with sufficient rigidity for penetrative

intercourse, the absence of which ends in failure and displeasure. This condition has been elaborately described as "Klaibya"² in the Ayurvedic classics and as "Erectile dysfunction" (ED) in the modern texts. The etiological factors of erectile dysfunction have been classified as organic, psychogenic or mixed. Ayurveda have eight branches. Vajikarana Tantra is the one among them which deals with encouragement of sexual health and prevention and treat of sex related problems. The drugs used in the treatment of sex related issues are known as Vrishya drugs. Vrishya Karma therapy is defined as the

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treatment modalities for getting accurate sexual support and power.

Definition

Erectile dysfunction (ED) or Klaibya is sexual dysfunction characterized by the incapability to develop or sustain an erection of the penis during sexual activity³. A penile erection is the effect of blood entering and being retained in sponge like bodies within the penis. The process is most often initiated because of sexual arousal when signals are transmitted from the brain to nerves in the penis.

Aetiological factors for Klaibya

According to Ayurveda excessive use of Katu, Amla, Ushna and Lavana Rasa,⁴ Vattapittaprakopakara Aahara, Krodha, Soka, Bhaya, Ajnana, Moha etc are the Manovikara and Alpa Sattva are the causes of the genesis of Klaibya. The external injuries, ageing, debilitating disease, alcohol, endocrine abnormalities will directly show their effect on Mana. According to modern, factors like lowered level of testosterone hormone, cardiovascular disease and diabetes, neurological problems (for example, trauma from prostatectomy surgery), hormonal insufficiencies (hypogonadism) and drug side effects also causes erectile dysfunction. Other aspects like lazy lifestyle, too much sleep and lack of exercise leads to erectile dysfunction. A study conducted found that 46.2% of men reported some sort of erectile dysfunction (ED)⁵.

General Symptoms of Klaibya

A person's inability to perform sexual act even with the beloved, willing and submissive

associate affecting the desire and capacity to perform sexual act due to obscurity in erection, non- erection or flaccidity of penis related with tachypnoea, perspiration, fatigue, difficulty and cessation of ejaculation where the efforts remain to fail is called the general symptoms of Klaibya⁶.

Types of klaibya

The classification of Klaibya is based upon the etiology of the disease. Charaka has classified Klaibya into 4 types viz Dhvajabhangaja, Bijopaghataja, Sukra Kshayaja and Jaraja⁷ while Sushruta and Bhavaprakasha have classified the same into six types viz Manasa, Saumya Dhatukshaya/ Pittaja, Sukra Kshayaja, Medrogaja, Sahaja and Sthira Sukranimitaja⁸.

Complications

Resulting from erectile dysfunction can be included as unsatisfactory sex life, inability to get partner pregnant, stress, anxiety, embarrassment or low self-esteem, relationship problems.

Gokshura Properties and actions

- Rasa - Madhura (sweet).
- Guna (properties) Guru (heavy to digest), Snigdha (unctuous), Veerya (potency) Sheeta (cooling),
- Vipaka (taste after digestion based on activity) Madhura (sweet),
- Effect on Dosha- Vattapittasaamaka,
- Karma (pharmacological actions) Brumhana (nourishing), Vatanut (pacifies Vata Dosha), Vrusya (aphrodisiac), Ashmarihara (removes, urinary stone), Vastishodhana (cures bladder ailments)⁹.

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Pharmacological Properties of *Tribulus terrestris*

To explore the scientific basis for the use of *Tribulus terrestris*, many pharmacological and clinical investigations are reviewed. It has been found that these studies include diuretic, aphrodisiac, immunomodulatory, antihypertensive, antihyperlipidemic, antidiabetic, hepatoprotective, anticancer, anthelmintic, antibacterial, analgesic, and anti-inflammatory effects of this plant. These all effects are useful in management of erectile dysfunction.

Aphrodisiac activity of *Tribulus terrestris*

Tribulus terrestris extract exhibited a pro-erectile effect on rabbit corpus cavernous smooth muscle after oral treatment at doses of 2.5, 5, and 10 mg/kg body weight for 8 weeks. A significant relaxation of 24% was observed with nitroglycerine in the corpus cavernous smooth muscle tissue. Similarly, 10% relaxation was observed with both acetylcholine and electrical field stimulation, respectively, following the above treatment with *Tribulus terrestris* in rabbits. The increased relaxation effect observed is due to increase in the release of nitric oxide from the endothelium and nitrergic nerve endings, which may support its claims as an aphrodisiac¹⁰. Studies evaluated the acute and repeated dose administration of lyophilized aqueous extract of the dried fruits of *Tribulus terrestris* (LAET) at doses of 50 and 100 mg/kg of body weight as a sexual enhancer in the management of sexual dysfunction in male rat. A dose-dependent

improvement in the management of sexual dysfunction was observed with the LAET treatment, which was more prominent on chronic administration of LAET. A significant increase in serum testosterone levels too was observed. These findings confirm the traditional use of *Tribulus terrestris* as a sexual enhancer in the management of sexual dysfunction in males¹¹. Ethanol extract of *Tribulus terrestris* exhibited protective effect against cadmium-induced testicular damage. The protective effect appears to be mediated directly either through inhibition of testicular tissue peroxidation by antioxidant and metal chelating activity or by stimulating the testosterone production from Leydig cells¹². *Tribulus terrestris* extract (100-300 mg/l) treatment to a fish colony was found to be effective in increasing the proportion of males in the population. It was found that testes of fish treated with *Tribulus terrestris* extract showed all stages of spermatogenesis with improved growth performance in *Poeciliata reticulata* fish species¹³. The two main components of the saponin fraction from *Tribulus terrestris*, namely protodioscin and protogracillin, are responsible for the observed biological aphrodisiac activity¹⁴. It suggested that protodioscin works by increasing the conversion of testosterone into the dehydrotestosterone, which stimulates increase in the sex drive but also the production of red cells from bone marrow along with muscular developments contributing to improvement of blood circulation and the oxygen transport systems, leading to optimal health. Animal

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studies in rats and rabbits have shown good results. A study proved that administration of *Tribulus terrestris* extract can produce significant increase in levels of testosterone, dihydrotestosterone and dehydroepiandrosterone, and produces effects suggestive of aphrodisiac activity¹⁵.

DISCUSSION

Gokshura is said to have Madhura Rasa, Guru and Snigdha Guna, Madhura Vipaka and Shita Virya. The effect of Gokshura in the enhancement of erection and rigidity may be because of its Vrishya Guna associated with Guru and Snigdha Guna. Charaka has mentioned Guru Guna as one among the six qualities of Vrishya Dravya¹⁶. The Vrishya effect of Gokshura is also described in the Ayurvedic texts. Due to its Shita Virya the results found in improving orgasm and performance activity may be due to the Guru Guna and balya property. Enhancement on self and partner's enjoyment after intercourse may be because of improvement in erection, rigidity and the time duration of ejaculation. The percentage-wise improvement in serum testosterone may be due to its Shukra Vriddhikara and Vrishya Guna, as male androgens are being correlated with Sarva Shariragata Shukra. Here, Guru and Snigdha Guna are like the properties of Shukra¹⁷. So it has increased the sperm count. *Tribulus terrestris* have some naturally steroidal compounds. The furostanol saponins stimulate testosterone production by suppressing natural

hormone receptors. This results in the production of greater amounts of luteinizing hormone (LH) which in turn encourages the body, specifically the Leydig cells in the testis, to create more testosterone.

CONCLUSION

Ayurvedic scientific study reveals that *Klaibya* can correlate with erectile dysfunction. *Tribulus terrestris* is an herbal drug describe in Ayurveda. Scientific study shows that its increase testosterone hormone in the body. The effect of *Tribulus terrestris* is very effective in erectile dysfunction without any adverse effect on any system or organ. Gokshura is a potent drug in improving erectile dysfunction.

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REFERENCES

1. Charaka Samhita, Edited by Pt. Kasinath pandy, Chaukhamba bharti acadmey, Varanasi, Reprinted Edition 2005, Sutrasthana, dirgajiviyadhyaya, 1/15, page no. 7.
2. Charaka Samhita, Edited by Pt. Kasinath Sastri, Chaukhamba bharti acadmey, Varanasi, Reprinted Edition 2006, Chikitsasthana, Yonivyapada adhyaya, 30/154. Page No. 863.
3. Cary's, Human Sexuality, edition 3rd Page: 304
4. Sushruta samhita, edited by ambikadutshastry, chaukhamba sanskrita sansthaan, Varanasi, reprinted edition 2007. Chikitsasthana, kshinabaliyavajikarnachikitsa adhyaya 26/10 page no118.
5. R: Moreira ED Jri, et.al. Prevalence and correlates of erectile dysfunction: results of the Brazilian study of sexual behavior; Urology. 2001 Oct;58(4):583-8.
6. Charaka Samhita, Edited by Pt. Kasinath Sastri, Chaukhamba bharti acadmey, Varanasi, Reprinted Edition 2006, chikitsasthana, Yonivyapadaadhyaya, 30/155. Page No. 863.
7. Charaka Samhita, Edited by Pt. Kasinath Sastri, Chaukhamba bharti acadmey, Varanasi, Reprinted Edition 2006, Chikitsasthana, Yonivyapada adhyaya, 30/154. Page No. 863.
8. Sushruta samhita, edited by ambikadutshastry, chaukhamba: sanskrita sansthaan, Varanasi, reprinted edition 2007, Chikitsasthana, kshinabaliyavajikarnachikitsa adhyaya 26/9-15- page no118.
9. Sharma PV. Dravya Guna Vijnana. 5th edition. Varanasi: Chaukhamba Bharati Academy: 1981. Part 2. p.633.
10. Adaikan PG, Gauthaman K. Prasad RN. Proerectile pharmacological effects of Tribulus terrestris extract on the rabbit corpus cavernosum. Ann Acad Med. 2000; 29:22-6. [PubMed]
11. Singh S, Nair V. Gupta YK. Evaluation of the aphrodisiac activity of Tribulus terrestris Lion, in sexually sluggish male albino rats, J Pharmacol Pharmacother. 2012; 3:43-7. [PMC free article] [PubMed].
12. Rajendar B, Bharavi K. Rao GS. Kishore PV, Kumar PR, Kumar CS. et al. Protective effect of an aphrodisiac herb Tribulus terrestris Linn son cadmium-induced: testicular a Pharmacol. 2011; 43:508-73- [Indian article] [PubMed]
13. Kavitha P. Ramesh R Subramanian P. Histopathological changes in Poecilia latipinna male. gonad due to Tribulus terrestris administration. In Vitro Cell Dev Biol Anim. 2012;48:306-12 [PubMed]
14. Adaikan PG, Gauthaman K. Prasad RN. History of herbal medicines with an insight on the pharmacological properties of Tribulus terrestris, Aging Male. 2001; 4:163-9.
15. Gauthaman K, Ganesan AP (Jan 2008). "The hormonal effects of Tribulus terrestris and its t in the management of male erectile dysfunction-an evaluation using primates, rabbit and rat". Phytomedicine 15 (1-2): 44-54- doi:10.1016/ j. phymed.2007.11. 011.PMID 18068966

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16. Charaka Samhita, Edited by Pt. Kasinath Sastri, Chaukhamba bharti acadmey, Varanasi, Reprinted Edition 2006, Chikitsasthana.

Vajikarnaadhyaya, 2/4/36, Page No. 89.

17. Charaka Samhita, Edited by Pt. Kasinath Sastri, Chaukhamba bharti acadmey. Varanasi.

Reprinted Edition 2006, Chikitsasthana, vajikarnaadhyaya, 2/4/50. Page No. 92.