



Review Article

www.ijrap.net



EXPLORING THE CONCEPT OF VRISHYA PROPERTY OF VAIKRANTA BHASMA

Kiran¹, Tripathi R.^{2*}

¹Lecturer, Government Autonomous Ayurvedic College, Rewa, M.P., India

²Dept. of Ras shastra & Bhaishajya Kalpna, Allahabad, U.P., India

Received on: 22/01/13 Revised on: 27/02/13 Accepted on: 14/03/13

*Corresponding author

E-mail: dr.riturajtripathi@gmail.com

DOI: 10.7897/2277-4343.04327

Published by Moksha Publishing House. Website www.mokshaph.com

All rights reserved.

ABSTRACT

Now a days, we live in an increasingly hostile environment. During the past 50 years, there has been a decline in the concentration, motility and percentage of morphologically normal spermatozoa in fertile men independent of the age. Sushruta has defined vajikarana tantra as a branch which deals with the management of defective semen and spermatogenesis along with sexual potencification. Many ancient scholars have described that vaikrant bhasma is vrishya, rasayana, balya and kshayanashaka. Elemental analysis of vaikranta bhasma showed that it contained Fe, Si, S, Ca, Mg, Al and B in different proportions. These elements have very positive effect on semen parameters. Vaikranta bhasma is a potent vrishya drug according to Ayurvedic parameters, but we need more researches to prove it on modern scientific parameters.

Keywords: Vrishya, Vajikarana, Vaikranta Bhasma

INTRODUCTION

Ayurveda is the most ancient system of medicine where importance of metals and minerals for curing ailments was first recognized. A careful observation of texts of rasa shastra reveals that it not only covers the entire field of inorganic pharmaceutical preparations, but also specifically explains how the metal and mineral preparations are to be used.

Now a days, we live in an increasingly hostile environment. There are frequent revelations about factors that negatively affect the semen quality. The totality of physical, chemical, biological, behavioral and socio-economic factors, that constitute the external milieu, is playing a major role in the development of disturbances in seminal parameters. During the past 50 years, there has been a decline in the concentration, motility and percentage of morphologically normal spermatozoa in fertile men that is independent of the age of men.¹ No study has reported after 1947 an average sperm density above 100mil/ml in fertile man.² This trend concerns all the male population, so the proportion of men with fertility problems is likely to increase in near future.

Vaikranta has very important place in rasa shastra and is placed under maharasa and upratna group. It has been mentioned that vaikranta can be used in place of diamond, which is a very precious stone and whose use is beyond the limit of common man. Vaikranta possesses pharmacological and therapeutic properties similar to diamond, but still very few research scholars have worked on it. Many ancient scholars have described that vaikranta bhasma is vrishya, rasayana, balya and kshayanashaka. Therapeutical properties of vaikranta are depicted in Table 1.

Vrishya and Vajikarana

Sushruta has defined vajikarana tantra as a branch which deals with the management of defective semen and spermatogenesis along with sexual potencification.³

According to Charaka, the method of therapy which improves potentiality for getting offspring for the continuity of lineage; treats all types of disorders of shukra; causes instantaneous sexual excitation and performance like a strong horse ; and nourishes the tissue elements, is called Vajikarana.⁴

Dalhana described 'vrishyam shukrajanakam' and vajikarana as shukrapravartaka. Vrishya dravyas may act as vajikara also, but all vajikara dravyas do not possess vrishya property, because stimulant action on shukravaha samsthana is predominant in vajikara dravyas while vrishya is beneficial mainly in increasing the shukra in quantitative and qualitative measures.

In Rasa Ratna Samucchaya, there is no reference of shukradushti is found, but vajikarana has been dealt in a separate chapter. Vajikarana drugs have been mentioned in visakalpa and rasakalpa chapters.

In Yogratnakara, details of etiology, pathogenesis, types of klaibya and various vajikaraka drugs for its treatment have been mentioned. Ashtanga maithuna have been described.

Bhaishajya Ratnavali has reference of numerous preparations to promote shukra in addition to vajikarana and vrishya yogas, but there is no description of shukradushti.

Bhavaprakasha explained vrishya as shukravridhdikara which means that it increases the quantity and quality of shukra in the human body i.e. it improves seminal parameters.

Table 1: Therapeutical Properties of Vaikranta

Reference book	Properties
Anandkanda	Tridosahara, Ayushya, Balya, Sarvarogahara, Varnya, Medhya, Agnideepana, Dehalohakara
Ayurveda Sara Samgraha	Tridosahara, Jvara, Kustha, Kshayanashaka, Vishaghna, Hridya, Shotha, Medhya, Agnideepana, Rasayana, Dehadridhakara, Tvachya
Ayurveda Prakash	Shadarasa, Tridosahara. Useful in Udararoga, Kasa, Jvara, Kshaya, Pandu, Shvasa and Prameha
Ayurvediya Rasa Shastra	Sarvarogahara, Balya, Varnya, Vrishya, Medhya, Agnideepana, Rasayana, Dehalohakara, Tvachya. Useful in Udararoga, Kasa, Jvara, Kushtha, Kshaya, Visha, Pandu, Shvasa and Shotha.
Bhartiya Rasa Shastra	Ayushya, Balya, Varnya and Vishaghna. Useful in Jvara, Kushtha, Kshaya, Pandu.
Dhanvantari Nighantu	Sarvarogahara, Ayushya, Balya, Vrishya, Medhya, Agnideepaka, Rasayana, Dehalohakara, Tvachya. Useful in Kasa, Grahani, Kshaya and Prameha
History of Hindu Chemistry	Sarvarogahara, Balya
Kaideva Nighantu	Kshayanashaka, Vishaghna, Hridya, Dehalohakara. Useful in Jvara and Kushtha
Nighantu Ratanakar	Shadarasa, Tridosahara, Dehalohakara, Dehadridhaka Kshayanashaka, Vishaghana. Useful in Udararoga, Kasa, Jvara, Kushtha, Pandu and Prameha
Parada Samhita	Tridosahara, Kshayanashaka, Dehalohakara. Useful in Jvara and Kushtha
Rasa Chintamani	Shadarasa, Kshayanashaka, Vishaghna, Tridosahara, Dehalohakara, sarvarogahara. Useful in Kasa, Grahani, Pandu and Shvasa
Rasa Tarangini	Tridosahara, Medhya, Agnideepana, Rasayana, Dehadridhakara, Tvachya, Kshayanashaka, Vishaghna, Useful in Udararoga, Kasa, Jvara, Kushtha, Pandu, Shvasa, Prameha and Shotha
Rasendra Mangala	Shadarasa, Tridosahara, Kshayanashaka, Vishaghna, Dehalohakara, Dehadridhaka. Useful in Jvara and Kushtha
Rasa Mitra	Sarvarogahara, Balya, vrishya, Medhya, Rasayana, Vishghna. Useful in Jvara, Grahani, Kushtha, and Prameha
Rasa Ratna Samucchaya	Tridosahara, Kshayanashaka, Vishaghana, Dehalohakara. Useful in Jvara and Kushtha
Rasa Jala Nidhi	Tridosahara, Kshayanashaka, Vishaghna, Ayushya, Balya, Varnya, Vrishya, Medhya, Agnideepana, Rasayana, Dehalohakara. Useful in Jvara, Kushtha

Pharmacological action according to Ayurveda

Ayurvedic pharmacology depends on rasa-guna-virya-vipaka and prabhava. These can be called five principles of pharmacology. The vriddhi (stimulation) and kshaya (depression) are two modes of drug action. These may be complete or partial. As it is clearly stated in Charaka Samhita that certain drugs act through rasa, some through virya, some through their gunas, some through their vipaka and some through their prabhava.⁶

Vaikranta possesses all the six rasas (shada-rasa). Its pharmacological properties show that it is guru in guna, sheeta in virya, madhura in vipaka and madhura rasa pradhana.⁷ Pharmacological properties of vaikranta are described in Table 2.

Table 2: Depicting Pharmacological Properties of Vaikranta

Criteria	Vaikranta
Rasa	Shada rasa yukta ⁸ (madhura rasa pradhan)
Guna	Guru
Virya	Sheeta
Vipaka	Madhura
Tridosha Prabhava	Tridosahara ⁹
Dose	1/24 to 1/11 ratti ¹⁰ , 1 to 2 ratti ¹¹ 1/4 to 1/2 ratti, 1/8 to 1 ratti, 1/8 to 2 ratti ¹²

The madhura rasa, sheeta virya and madhura vipaka being homologous to body, increase the body nutrient fluid, blood, flesh, fat, bone marrow, vital essence, semen, clarifies the sense organs, imparts vigour and complexion. Madhura rasa increases shukra (madhuro rasah shukrabhivardhnah¹³, mahura vipaka and sheeta virya are also shukrala¹⁴. It has Viryavardhaka and Vrishya

properties. All these factors might have synergistically acted and have brought improvement in seminal parameters of healthy volunteers and patients.

According to basic principles of Ayurveda, discordance of body elements causes diseases (vikaro dhatu vaishamyam) and the medicine is that which when well administered, becomes an equalizer of increased and diminished elements. Disorders in seminal parameters are also due to discordance of body elements and vaikranta bhasma brings down the excessive elements and augments the deficient ones without any side effect. In healthy volunteers, body elements are in equilibrium, so vaikranta bhasma just maintained their normalcy and improved the quality of semen, while in patients, it improved the quality of semen up to the limit of normalcy. This is why intergroup comparison showed significant difference between the results of healthy volunteers and patients.

Probable pharmacological action according to Modern researches

Elemental analysis of vaikranta bhasma showed that it contains Fe, Si, S, Ca, Mg, Al and B in different proportions. These elements have very positive effect on seminal parameters.¹⁵

Modern researches also showed role of iron in spermatogenesis. The essential role of transferrin-bound iron in the process of spermatogenesis is supported by the presence of transferrin receptors on human spermatocytes and spermatids. Holmes et al 1982 demonstrated a positive correlation between sperm density and level of seminal plasma transferrin.¹⁶ The early results indicate that the abnormalities in sertoli cell function, leading to a reduced secretion of transferrin, had a direct effect on

male fertility. The concentration of seminal plasma transferrin is considerably lower in subjects with azoospermia or oligospermia. Its level correlates well with sperm count, sperm motility and ability of the sperm to fertilize human oocytes in-vitro, providing an early and specific marker of sertoli cell function. Aluminum is also present in Vaikranta Bhasma, which increases the testicular iron content. The experimental study on rats proved that the accumulation of testicular Fe and Cu increased remarkably in Al-exposed groups.¹⁷

Calcium concentration in semen is of great interest as a result of its relation to sperm motility, metabolism, acrosome reaction and fertilization itself.¹⁸ Only a small portion (2%–4%) of calcium is present in semen in ionized form.¹⁹ In addition, binding with other compounds (citrate, phosphate, proteins etc.) may reduce calcium activity (ionization). Semen has a very high calcium buffering capacity.²⁰⁻²⁴ Calcium also binds to the sperm surface, which can lead to differences between measurements on whole semen vs seminal plasma.²⁵ During spermatogenesis, from spermatogonia to early spermatids, the density of Ca^{2+} current increased while the K^+ current density decreased significantly in rats.²⁶ It shows the importance of calcium supplementation in spermatogenesis.

The highest concentrations of silicon are found in the walls of arteries, tendons, skin, bone, muscle, testis, kidney and spleen. Supplementation of silicon in the diet of rats increased the calcium percentage in these animals by 20%, compared to rats kept on a normal diet. Silicon increases the excretion of aluminum and also reduces the absorption of excess of aluminium. High dose of aluminum can cause neurotoxicity, but silicon protects against the neurotoxic effect of Aluminum.²⁷

Boron plays an important role in metabolism of other components involved in health including calcium, magnesium, zinc and phosphorous. Boron improves absorption and retention of calcium, magnesium, phosphorous in vitamin D deficient rats.²⁸ Additionally, boron has been reported to affect the efficacy of some hormones including thyroid, insulin etc.²⁹. Research has shown that low boron diets have been associated with reduced testosterone levels and boron supplements have been shown to increase serum levels of testosterone in postmenopausal women.

Effect of boron supplements on hormones production and sperm parameters was determined in two infertile males. Supplementation resulted in an increase in plasma testosterone and estradiol concentration, consequently correcting the abnormal forms of sperm cells in one case ; improvement in sperm motility in second case and significant elevation in number of sperm cells in both individuals.³⁰

The other important ions found in human semen are magnesium, potassium, sodium, and zinc. The concentrations of calcium, magnesium, and zinc are highly correlated.^{31,32} Magnesium and zinc are also found complexed with other molecules, which can sometimes be bound to the surface of sperm cells.³³⁻³⁵

Semen is notable for its high osmolarity, which is substantially higher than that of blood plasma. The osmolarity of semen depends greatly on the concentration

of sugars, other organic compounds as well as ionic salt concentrations.³⁶ Vaikranta Bhasma ensures the availability of ionic salt concentrations in equilibrium to maintain its osmolarity.

Role of Mg loss in the damage caused by stress is less known which increases the ageing process.³⁷ Free radical damage to membranes and to immune surveillance is implicated in the ageing process. Both vitamin E (as a free radical scavenger) and Mg are important in maintaining membrane stability.³⁸ Inter-relationships between the two are indicated by the lowered tissue Mg levels in vitamin E deficient animals³⁹ and manifestations of Mg deficiency in vitamin E deficiency in rats.⁴⁰ Stress and ageing affects semen quality negatively. Supplementation of Vaikranta Bhasma provides proper intake of Mg and delays ageing process. Thus, all the minerals and trace elements present in vaikranta bhasma work synergistically and help in improving semen quality.

CONCLUSION

Description about shukradushti, vrishya property of drugs and vajikarana are available in the entire span of Ayurveda. The terminologies used might have been different, but the importance of vajikarana in maintaining a healthy sexual life was very much understood.

Therapeutic effectiveness of vaikranta bhasma has been established and well documented by the great Acharyas in the form of classics attributed to them. In the light of recent researches, it can be easily understood that metals, minerals and their cations play a critical role by acting as catalysts or structural components of large molecules with specific functions and are thereby indispensable for life. However, lot of changes have occurred in our living environment since these classics were written and impact of these changes on the therapeutic efficacy of the preparations formulated has not been ascertained. Thus, it can be concluded that vaikranta bhasma is a potent vrishya drug according to Ayurvedic parameters, but, more researches need to be done on it to prove it on modern scientific parameters.

REFERENCES

- Carlson E, Giwercman A, Keiding N et al. Evidence for decreasing quality of semen during the past 50 years. *BMJ* 1992; 305: 609-13 <http://dx.doi.org/10.1136/bmj.305.6854.609>
- Glezerman M, Bartoov B. Semen analysis. *Infertility: Male and Female*. 2nd edition, Edinburgh: Churchill Livingstone; 1993:285–315
- Sushruta Samhita (English translation and Dalhana's commentary along with critical notes), By Prof. P. V. Sharma, Vol. I-III, published by Chaukhambha Visvabharati, Varanasi, 1st edition, 1999, Sutra sthana 1/8
- Charaka Samhita (English translation and critical notes) Prof. P. V. Sharma Vol. I-IV. Published by Chaukhambha Orientalia, Varanasi, 8th edition, 2003 Chikitsa sthana 1/1/9-12, 2/4/52
- Sushruta Samhita (English translation and Dalhana's commentary along with critical notes), By Prof. P. V. Sharma, Vol. I-III, published by Chaukhambha Visvabharati, Varanasi, 1st edition, 1999, Ch. 45/49
- Charaka Samhita (English translation and critical notes) Prof. P. V. Sharma Vol. I. Published by Chaukhambha Orientalia, Varanasi, 8th edition, 2003 Sutra sthana 26/71.
- Reddy K.R.C, Text Book of Rasa Sastra, Chaukhambha Sanskrit Bhawan, Varanasi, 1st edition, 2007, p 297
- Upadhyay Madhav , Ayurved Prakash, commentary by Gulrajsharma mishra, Chuakhambha Bharti Academy, Varanasi, Reprint 1999, Ch. 5/167

9. Vagbhatta Rasa, Rasa Ratna Samuchchaya, Commentary by Prof. Dattatreya Anant Kulkarni, Meherchand Lachhamandas Publications, New Delhi, Vol. I, 1998, Ch. 2/55
10. Sharma Sadanand, Rasa Tarangini, Motilal Banarsi Das, Delhi, 11th Edition, 2004
11. Ayurved sar samgraha, Shree baidyanath Ayurved Bhawan Pvt. Ltd., Naini, 2009, page 134.
12. Desai Vaman Ganesh, Bhartiya Rasa Shashtra, Raghuvamshi Prakashan, Mumbai.
13. Charaka Samhita (English translation and critical notes) Prof. P. V.Sharma Vol. II. Published by Chaukhambha Orientalia, Varanasi, 8th edition, 2003 Sutra sthana 26/42.
14. Charaka Samhita (English translation and critical notes) Prof. P. V.Sharma Vol. I. Published by Chaukhambha Orientalia, Varanasi, 8th edition, 2003 Sutra sthana 26/61
15. Tripathi R., Rathore AS, Mehra BL, Raghubeer R, APharmaceutico-toxicological study of vaikranta bhasma prepared with sulphur media and its effect as vrishya w.s.r. to seminal parameters, thesis submitted to H.P.University, Shimla 2008
16. Holmes S D, Lipshultz L I, Smith R G. Transferrin and gonadal dysfunction in man. Fertil Steril 1982; 38:600-604.
17. Chih-Hung Guo, Chang-Jen Huang, Ya-Ling Chiou and Guo-Shyng Wang Hsu, Alteration of trace element distribution and testis ACE activity in mice with high peritoneal aluminium, Biological trace element research, may 2002, vol 86, issue 2
18. Sorensen M B, Bergdahl I A, Hjollund N H, Bonde J P E, Stoltenberg M, Ernst E. Zinc, magnesium and calcium in human seminal fluid: relations to other semen parameters and fertility. Mol. Hum. Reprod 1999; 5: 331-337. <http://dx.doi.org/10.1093/molehr/5.4.331>
19. Arver S, Sjoberg H E. Calcium fractions in seminal plasma and functional properties of human spermatozoa. Acta Physiol. Scand. 1982; 116: 159-165. <http://dx.doi.org/10.1111/j.1748-1716.1982.tb07125.x>
20. Mann T, Lutwak-Mann C. Male Reproductive Function and Semen: Themes and Trends in Physiology, Biochemistry and Investigative Andrology. New York, NY: Springer-Verlag; 1981.
21. Arver S, Sjoberg H E. Calcium fractions in seminal plasma and functional properties of human spermatozoa. Acta Physiol. Scand.1982; 116: 159-165 <http://dx.doi.org/10.1111/j.1748-1716.1982.tb07125.x>
22. Magnus O, Abyholm T, Kofstad J. et al. Ionized calcium in human male and female reproductive fluids: relationships to sperm motility. Hum. Reprod. 1990; 5: 94-98.
23. Ford WCL, Harrison A. The role of citrate in determining the activity of calcium ions in human semen. Int J Androl. 1984; 7:198-202. <http://dx.doi.org/10.1111/j.1365-2605.1984.tb00777.x>
24. Fong J C, Lin C H, Wei Y H, Ho L T, Hong C Y. Calcium buffering capacity of human seminal plasma: the role of EGTA in stimulating sperm motility. Chin J Physiol. 1986; 29:7-12.
25. Mann T, Lutwak-Mann C. Male Reproductive Function and Semen: Themes and Trends in Physiology, Biochemistry and Investigative Andrology. New York, NY: Springer-Verlag; 1981
26. Hagiwara S, Kawa K. Calcium and potassium currents in spermatogenic cells dissociated from rat seminiferous tubules, J. Physiol. 1984 Nov;356:135-49.
27. Carlisle E M, Curran M J. Effect of dietary silicon and aluminium on silicon and aluminium levels in rat brain, Alzheimer dis Assoc Disord 1987; 1(2): 83-90
28. Hunt C D. The biochemical effects of physiologic amounts of dietary boron in animal nutrition models. Environ. Health Perspect. 1994;102(Suppl.7):35-43. <http://dx.doi.org/10.1289/ehp.94102s735>
29. Bourgeois A C, Scott M E, Sabally K, Koski K G. Low dietary boron reduces parasite (nematoda) survival and alters cytokine profiles but the infection modifies liver minerals in mice. J Nutr 2007; 137:2080-2086.
30. Naghii M, Mofid M, Effect of boron on sperm parameters in two infertile men- case report, Trauma Monthly 2008, 13 (1): 79-82
31. Homonnai Z T, Paz G, Weiss J N, David M P. Quality of semen obtained from 627 fertile men. Int J Androl. 1980; 3:217-228. <http://dx.doi.org/10.1111/j.1365-2605.1980.tb00111.x>
32. Adamopoulos D A, Deliyiannis V. Seminal plasma magnesium, calcium and inorganic phosphate concentration in normozoospermic and subfertile men. Andrologia. 1983; 15:648-654. <http://dx.doi.org/10.1111/j.1439-0272.1983.tb00183.x>
33. Lindholmer C, Eliasson R. Zinc and magnesium in human spermatozoa from different fractions of split ejaculates. Int J Fertil. 1974; 19:45-48.
34. Hirsch I H, Jeyendran R S, Sedor J, Rosecrans R R, Staas W E. Biochemical analysis of electroejaculates in spinal cord injured men: comparison to normal ejaculates. J Urol. 1991; 145:73-76.
35. Mann T, Lutwak-Mann C. Male Reproductive Function and Semen: Themes and Trends in Physiology, Biochemistry and Investigative Andrology. New York, NY: Springer-Verlag; 1981
36. Mandal A, Bhattacharyya A K. Physical properties and non-enzymatic components of human ejaculates. Relationship to spontaneous liquefaction. Int J Androl. 1985; 8:224-231. <http://dx.doi.org/10.1111/j.1365-2605.1985.tb00837.x>
37. Harman D. Aging: a theory based on free radical and radiation chemistry. Journal of Gerontology. 1956; 11(3): 298-300. <http://dx.doi.org/10.1093/geronj/11.3.298>
38. Elin R J, Tan H K. Erythrocyte membrane plaques from rats with magnesium deficiency. Blood. 1977; 49:657-664.
39. Blaxter K L, Wood WA. The nutrition of the young ayrshire calf. 9. Composition of the tissues of normal and dystrophic calves. Brit J Nutr 1952; 6:144. <http://dx.doi.org/10.1079/BJN19520015>
40. Schwartz K. Vitamin E trace elements and sulfhydryl groups in respiratory decline. Vits Horm 1962; 20:3.

Cite this article as:

Kiran, Tripathi R. Exploring the concept of Vrishya property of Vaikranta bhasma. Int. J. Res. Ayurveda Pharm. 2013;4(3):443-446

Source of support: Nil, Conflict of interest: None Declared