ISSN 2456-3110
Vol 9 · Issue 11
November 2024

JAiMS
INTERNATIONAL

Journal of Ayurveda and Integrated Medical Sciences

www.jaims.in

JAIMS

An International Journal for Researches in Ayurveda and Allied Sciences

Maharshi Charaka
Ayurveda

Indexed

Journal of
Ayurveda and Integrated Medical Sciences
ISSN 2456-3110
REVIEW ARTICLE November 2024

Conceptualizing Hyperprolactinemia and Ayurvedic Therapeutic Approaches

Vasanthi Thondambatti[1], Sanjeev Kadlewad[2], Archana Panchaxarimath[3]

[1]*Associate professor, Dept. of Prasuti Tantra Evum Stree Roga, Rajarajeswari Ayurvedic Medical College, Humnabad, Karnataka, India.*

[2]*Professor, Dept. of Panchakrama, Rajarajeswari Ayurvedic Medical College, Humnabad, Karnataka, India.*

[3]*Professor, Dept. of Swastavritta and Yoga, Parul Institute of Ayurveda and Research, Parul University, Vadodara, Gujarat, India.*

ABSTRACT

Hyper prolactinemia is a condition in which a person has higher-than-normal levels of the prolactin in the blood. The prolactin is related to breast development in pregnancy and lactation. Hyperprolactinemia have serious effects on woman population. Modern medicine treatment has certain side effects therefore an Ayurvedic approach towards this problem should be identified and implemented. One common cause of hyperprolactinemia is a growth or tumour on the pituitary gland called a prolactinoma. Amenorrhea or oligomenorrhea, galactorrhea, infertility, breast tenderness, low libido, headachesand vision changes may be observed in cases with hyperprolactinemia. Dopamine agonist drugs including bromocriptine, pergolide, quinagolideand cabergoline are mostlyused for treating hyperprolactinemia. According to Ayurved this pathology involves vitiation of *Majjadhatu* and *Shukradhatu Agni*. The *Granthi* and *Arbuda* described in Ayurved may be correlated with prolactinoma. The *Kapha* and *Vata* vitiation is predominant in such cases. *Shodhana* (*Langhana*), *Panchakarma* like *Vamana, Niruha, Anuvasana* etc. can be administered as treatment. The *Shamana Chikitsa* with *Kapha* and *Vata-Shamaka* drugs is useful in this condition.

Key words: *Hyperprolactinemia, Ayurved*

INTRODUCTION

Hyperprolactinemia is a condition in which a person has higher-than-normal levels of the prolactin in the blood. Prolactin is a 198-amino acid protein (23-kd) produced in the lactotroph cells of the anterior pituitary gland. Its primary function is to enhance breast development during pregnancy and to induce lactation. However, prolactin also binds to specific receptors in the gonads, lymphoid cells and liver.[1]

Prevalence of hyperprolactinemia in general population women is less than 1% and is 5-14% in patients presenting with secondary amenorrhea. Approximately 75% of cases presents with galactorrhea and amenorrhea having hyperprolactinemia. Out of these patients approximately 30% have prolactin-secreting tumors.[2]

The changes in diet and lifestyle in present era has brought many changes in human physiology. The psychosomatic and lifestyle disorders are being more prevalent now a day. The ailments related to hyperprolactinemia have serious effects on woman population. Modern medicines have certain side effects for treatment of many diseases therefore an Ayurvedic approach towards this problem should be identified and executed for the same.

OBJECTIVE OF THE STUDY

The Study of Hyperprolactinemia & its treatment through Ayurveda perspective.

Address for correspondence:
Dr. Vasanthi Thondambatti
Associate professor, Dept. of Prasuti Tantra Evum Stree Roga, Rajarajeswari Ayurvedic Medical College, Humnabad, Karnataka, India.
E-mail: dr.vasanthi.bams@gmail.com

Submission Date: 09/10/2024 Accepted Date: 21/11/2024

Access this article online

Quick Response Code

Website: www.jaims.in

DOI: 10.21760/jaims.9.11.31

ISSN: 2456-3110 REVIEW ARTICLE November 2024

Materials and Methods

Ayurved compendia, modern textbooks, research papers and literature from internet related to the topic was thoroughly reviewed.

Observations and Results

Lifestyle including diet, physical exercise and mental peace have great role in maintenance good health. Numerous researchers have been known to have paid special attention to this subject. Hyperprolactinemia is one of gynaecological condition which has ill effects on woman health. It is caused by increase in levels of prolactin in blood.

The primary action of prolactin is to stimulate breast epithelial cell proliferation. During lactation and breastfeeding, ovulation may be suppressed due to the suppression of gonadotropins by prolactin.[3]

Secretion of prolactin is pulsatile. It increases with sleep, stress, pregnancy and chest wall stimulation or trauma and therefore must be drawn after fasting. Normal fasting values are generally less than 25-30 ng/ml, depending on the individual laboratory, but can also vary for a number of reasons. Normal levels are also generally higher in women.[4]

Causes for Hyperprolactinemia[5]

One common cause of hyperprolactinemia is a growth or tumor on the pituitary gland called a prolactinoma. The tumor produces high levels of prolactin. These tumors can be large or small and are usually benign. Certain prescription medicines can also increase prolactin levels which can be enlisted as follows:

- Birth Control Pills
- Opiates - drugs derived from opium
- Anti-emetics
- Antacids & beta blockers
- Estrogen

Symptoms of Hyperprolactinemia[6]

- Amenorrhea (Secondary) or Oligomenorrhea (absence or irregularity of menses not associated with pregnancy or menopause)
- Galactorrhea (Lactation not associated with pregnancy or recent childbirth)
- Infertility
- Breast Tenderness
- Low Libido
- Headaches, particularly between the eyebrows (More likely with macro-adenoma)
- Vision Changes (More likely with macro-adenoma)

Normally, hypothalamic dopamine inhibits the secretion of prolactin in a woman who is not pregnant, however, high levels of prolactin in the blood due to a secreting adenoma or nipple stimulation block the secretion of dopamine and therefore prolactin levels remain elevated. High prolactin levels also inhibit the release of luteinizing releasing hormone (LRH) from the hypothalamus and therefore inhibit the secretion of luteinizing hormone (LH) and follicle stimulating hormone (FSH) from the pituitary gland to the ovaries, thereby inhibiting ovulation and the menstrual cycle. Also as a result, low estrogen levels inhibit libido in women.

Diagnosis

A diagnosis of hyperprolactinemia is made with blood tests showing elevated levels of prolactin on at least two occasions. Normal prolactin levels in women who is non pregnant is 0 to 20 ng/ml. if Hyperprolactinemia are suspected with the presentation of moderately elevated levels of prolactin at 30 to 200 ng/ml. Hyperprolactinemia usually present prolactin levels at over 500 ng/ml. Diagnosis is confirmed with a magnetic resonance imaging (MRI) scan or computerized tomography (CT) scan to “define the presence of a lesion compatible with a pituitary tumor. [7]

Modern treatment Approach

The first line of approach for treating hyperprolactinemia is dopamine agonist drugs, including bromocriptine, pergolide, quinagolide and cabergoline. These drugs mimic dopamine and when given at the appropriate dosage, they normalize prolactin levels. Consequently, such patients may be able to take dopamine agonist drugs for life in order to

ISSN: 2456-3110 REVIEW ARTICLE November 2024

manage the condition. Under proper care, all patients are monitored regularly with blood testing and MRI.

Side effects of the listed dopaminergic drugs may include dizziness and nausea. In addition, the efficacy of the drugs may decrease with long-term use, so for both reasons, patients are started on low doses with dosage increased as needed. Most patients are able to tolerate these drugs, particularly cabergoline and quinagolide, but there are some people who are unable, and therefore, have to defer to other treatment options like Surgery and radiotherapy are the other two treatment options when a patient refuses or fails to respond well to pharmaceuticals.

Discussion

Hyperprolactinemia associated with abnormal pituitary function can be understood in Ayurved scripture with the help of its basic principles. The prolactin-secreting pituitary gland can be inferred from the Ayurvedic understanding of anatomy, tissue development and *Doshik* qualities. Pituitary gland is situated in the head, particularly the brain and it is most important body part as per Ayurved. Charaka Samhita states, "The head is the substratum of eleven vital and all the sense organs".[8]

Ayurveda considers the brain to be *Majja Dhatu* and part of the *Majjavaha Srotas*. The *Majja Dhatu* fills empty hollow spaces in the bone. The pituitary gland is located in the base of the brain in a small, bony cavity (hollow space) of the skull called the sella turcica. The relation of *Dhatu* formation and the impact of pituitary gland dysfunction on the reproductive system can be explained. The sixth *Dhatu, Majja Dhatu* precedes the formation of *Shukradhatu* (ovaries and testes) and therefore, provides the *Poshaka Majja* to the *Shukra Agni* to transform *Poshaka Majja* into *Shukra*. The poor quality of *Majja Dhatu* and *Poshaka Majja* or faulty *Shukra Agni*, may interfere with the formation, quality, quantity and function of *Shukra* and *Aartava*. Hormones are considered to be *Dhatu Agni*. The role of hormones is to act as transformational signals and metabolic directors to other sites of the body. Thus, prolactin could be considered as *Shukra dhatu Agni* or *Aartava Dhatu Agni* and *Stanyavaha Srotas*, originate in the *Aartava*.

The growth or tumor on the pituitary gland i.e., prolactinoma is one of common cause of hyperprolactinemia. Classical *Ayurvedic* texts do not specifically discuss pituitary tumors or pituitary hormones. However, *Sushruta Samhita* had discussed the development and treatment of tumors (*Gulma* and *Arbuda*) and glandular swellings. More specifically, *Gulma* is understood to refer to hard, palpable masses in the abdomen, *Granthi* refers to glandular swellings, benign tumors or a tumor that is visible from the surface and *Arbuda* refers to a cancerous malignancy.

Samprapti

From an Ayurvedic perspective, tumor formation is a condition of *Vata-Kapha* origin. *Vata* is responsible for the faulty division of cells and *Kapha* for their growth. Hence, *Vata* pushes *Kapha* out of balance resulting in tumor formation.[9] Benign tumors take on a predominantly *Kapha* appearance, "*Kapha* plays the predominant role in the development of *Granthi* (benign tumors) as it enters the affected *Dhatus*. Considering the potential role of *Vata*, even in the development of a benign tumor, *Apana Vayu* accumulates and becomes aggravated in the *Rasa* of the *Purishavaha Srotas* and overflows to the *Rasa* and *Rakta Dhatus* of the *Rasavaha* and *Raktavaha Srotas* respectively. *Prana Vayu* (of the head) and *Vyana Vayu* relocate to the *Majjadhatu* of the *Majjavaha Srotas* causing cell division (movement).

It is quoted that *Kapha* (water and earth) is 'the force of stability in the body' and is responsible for the growth and plays a lead role in the development of a benign tumor. *Kledaka Kapha* accumulates and becomes aggravated in the *Rasa* of the *Annavaha Srotas* and overflows to the *Rasa* and *Rakta dhatus* of the *Rasavaha* and *Raktavaha Srotas* respectively. *Kapha* then relocates to the *Majja Dhatu* of the *Majjavaha Srotas* resulting in abnormal tissue growth (tumor) of lactotrophs of the anterior pituitary gland (*Majja*).

According to the *Sushruta Samhita*, "the deranged and unusually aggravated *Vayu*, *Pitta, Kapha* etc. by

ISSN: 2456-3110 REVIEW ARTICLE November 2024

vitiating the flesh, blood and fat mixed with the *Kapha* (of any part of the organism), give rise to the formation of round, knotty, elevated swellings which are called *Granthi* (glandular inflammation).[10] The *Kaphaja Granthi* is slightly discolored and cold to the touch. It is characterized by a slight pain and excessive itching and feels hard and compact as a stone. It is slow or tardy in its growth and exudes a secretion of thick white-coloured pus when it bursts. While *Sushruta's* account of *Granthi* formation does not fully explain the development of a pituitary tumor, it does suggest the *Kaphajhanita* development of a slow-growing tumor.[11]

As a result of the benign pituitary tumor and increase in prolactin secretion, symptoms (*Rupa*) of hyperprolactinemia follows that result in further *Kapha* and *Vata* vitiation in other *Dhatus* and *Srotas* which may includes:

Lactation in nulliparous and unmarried women: *Tarpaka* and *Avalambaka Kapha* relocates to the *Rasa Dhatu* of the *Stanyavaha Srotas*.

Irregular/Scanty Menses (*Aartavadrishti*): Excess *Shukra-Dhatu Agni* 'burns up' or depletes *Shukra-Dhatu* allowing *Apana Vayu* to flow into the *Aartavavaha Srotas* resulting in an-ovulation and a lack of menses. *Vata* (*Apana*) may then relocate to *Asthi-Dhatu* of the *Asthivaha Srotas* resulting in decreased bone health and possible osteoporosis if left untreated. *Vata* may also relocate to the *Rasa-Dhatu* of the *Aartavavaha Srotas* causing vaginal dryness, a possible side effect of an-ovulation and reproductive hormonal imbalance.[12]

Headaches (*Shiro-Roga*) and Vision Changes: *Tarpaka Kapha* in the *Majja* of the *Majjavaha Srotas* (pituitary tumor) obstructs the *Majja* (optical nerve and other cranial structures) resulting in pain due to *Vata*and deranged *Alochaka Pitta* leading to vision changes.

Nidana (causes)

Referring to *Kaphajhanita* diseases of the head, *Charaka Samhita* states, "by sedentary habits, sleep during the daytime (when it is not desirable), excessive intake of heavy and unctuous food, the *Kapha* of the head gets vitiated and causes head-disease." Considering the *Samprapti*, the *Nidana* of a benign tumor (*Granthi*) of the *Majja-Dhatu* in the *Majjavaha Srotas* includes:

Possible *Vata Nidana*: *Vata*-aggravating diet, Excess intake of cold, dry and light foods, Irregular routines

Possible *Kapha Nidana*: *Kapha*-aggravating diets, Excess intake of heavy, unctuous, cold food, sedentary habits, sleep during the daytime.

Sadhyasadyata (prognosis)

A *Granthi* of the *Majja-Dhatu* in the *Majjavaha Srotas* (benign, prolactin-secreting tumor of the pituitary gland) is difficult to cure, not only from a western medical perspective, but also from an Ayurvedic perspective. Prolactinoma potentially involves the vitiation of two *Doshas* in the sixth *Dhatu* layer (*Majja*). According to Sushruta, a benign pituitary tumor is incurable. As stated earlier, the pituitary gland resides in the cavity of the sella turcica. Indeed, some patients require lifelong, western pharmaceutical treatment in order to manage their prolactinoma.[13]

Chikitsa (treatment)

The main pathology involved in the condition associated with prolactinoma is *Kapha* and *Vataja*. The treatment of this may include the balancing of these vitiated *Doshas*. *Anuvasana Basti* with any *Vataharataila like Dashamoolataila, Dhanvantaritaila, Hingutrigunataila, Sahacharaaditaila* and *Lasunataila* is predominantly used in *Vata* predominant conditions. Nose is said to be the door of head or brain and *Shatapushpataila Nasya* given through it should be considered here as the pathology is situated in base of skull. The first step is to clear *Ama* (toxicity) and regulate *Agni* (digestive fire). If the patient is strong enough, the patient should undergo *Langhana chikitsa* to clear *Ama* and alleviate excess *Kapha* and *Vata Doshas* from the body.[14] Following *Purvakarma*, the *Vamana* and *Niruha Basti* should be administered in order to remove vitiated *Doshas* from the head. If a patient is not strong enough, a palliative approach to clear *Ama* and regulate *Agni* should be taken following *Shodhana* and *Shamana Chikitsa* and *Samsarjana*

ISSN: 2456-3110 **REVIEW ARTICLE** November 2024

Krama, a variety of *Kapha*-pacifying dietary, lifestyle, herbal and body therapies should be considered in the Ayurvedic treatment of Hyperprolactinemia. Care must also be taken to prevent *Vata* vitiation. In order to reverse the *Nidana*, a *Kapha*-pacifying diet should be followed and include an emphasis on bitter and pungent tastes. A lifestyle including stable routines (to manage *Vata*), no oversleeping and exercise (including *Kapha*-pacifying yoga asana) should be followed. Appropriate body therapies in addition to *Nasya* may include medicated *Shiro-Basti* with *Dhanvantaritaila* and *Shirodhara* using lukewarm *Dhanvantaritaila*. *Abhyanga*, along with *Anuvasana Basti*, will also be important for managing *Vata*. The oils and other medication useful in such condition will be depending upon the constitution (*Prakriti*) and condition of the patient.

Conclusion

Hyperprolactinemia is one of gynaecological condition which has ill effects on woman health. Prolactinoma or tumour on the pituitary gland is one of common cause of hyperprolactinemia. According to *Ayurved* this pathology involves vitiation of *Majjadhatu* and *Shukradhatu Agni*. The *Granthi* and *Arbuda* described in *Ayurved* may be correlated with prolactinoma. Another aspect of adenoma there may bevitiation of *Kapha the Granti* form sand obstructs and aggravates due to this there is a chances of increased prolactin levels in the blood may be manifestation of such cases. *Shodana Chikitsas* like *Langhana*, *Vamana, Niruha, Anuvasana Basti, Sirodhaara* and *Nasya* with *Theekshna Vaatahara Tailas* etc. can be administered as treatment. The *Shamana Chikitsa* with *Kapha* and *Vata-Shamaka, Ushnaveerya, Katuvipaaka* which are used in *Granti* and *Arbuda Chikitsa* is useful in this condition.

References

1. Abha Majumdar and Nisha Sharma Mangal, Hyperprolactinemia, J Hum Reprod Sci. 2013 Jul-Sep; 6(3): 168–175.
2. Aziz K, Shahbaz A, Umair M, et al. (May 31, 2018) Hyperprolactinemia with Galactorrhea Due to Subclinical Hypothyroidism: A Case Report and Review of Literature. Cureus 10(5): e2723.
3. Stringer BM, Rowson J, Greer W, Wynford-Thomas D, Williams ED, Effect of sustained serum prolactin elevation on breast epithelial and myoepithelial cell proliferation, Cell Tissue Kinet. 1990 Jan; 23(1):17-30.
4. Emin M. Akbas, AdemGungor, CigdemOzdemir and Habib Bilen, Unusually High Prolactin Level for Medication-Induced Hyperprolactinemia: A Case Report, Eurasian J Med. 2013 Jun; 45(2): 138–140.
5. Omar Serri, Constance L. Chik, Ehud Ur & Shereen Ezzat, Diagnosis and management of hyperprolactinemia, CMAJ. 2003 Sep 16; 169(6): 575–581.
6. ErdalEren, ŞenayYapıcı, EsraDenizPapatyaÇakır, LatifeAytekinCeylan, HalilSağlam and ÖmerTarım, Clinical Course of Hyperprolactinemia in Children and Adolescents: A Review of 21 Cases, J Clin Res PediatrEndocrinol. 2011 Jun; 3(2): 65–69.
7. Omar Serri, Constance L. Chik, Ehud Ur &ShereenEzzat, Diagnosis and management of hyperprolactinemia, CMAJ. 2003 Sep 16; 169(6): 575–581.
8. Charaka. Charaka Samhita Volume I (Varanasi: Chowkhamba Sanskrit Studies Office.) Chapter 17, Verse 12.
9. Sushruta Samhita Volume II (Varanasi: Chowkhamba Sanskrit Series Office, 2nd Edition. 2000) Chapter 9, Verses 28 – 29
10. Sushruta Samhita Volume II (Varanasi: Chowkhamba Sanskrit Series Office, 2nd Edition. 2000) Chapter 9, Verses 30 - 33
11. Sushruta Samhita Volume II (Varanasi: Chowkhamba Sanskrit Series Office, 2nd Edition. 2000) Chapter 11, Verses 2 - 5
12. Sushruta Samhita Volume II (Varanasi: Chowkhamba Sanskrit Series Office, 2nd Edition. 2000) Chapter 11, Verses 11 – 12
13. Sushruta Samhita Volume II (Varanasi: Chowkhamba Sanskrit Series Office, 2nd Edition. 2000) Chapter 11, Verses 17 - 18
14. Marc Halpern, DC, CAS, PKS. Principles of Ayurvedic Medicine, 10th Ed. Pg. 81, 94-95, 144, 219, 229, 334.
15. American Society for Reproductive Medicine, Hyperprolactinemia Fact Sheet,Staff. http://www.asrm.org/uploadedFiles/ASRM_Content/R

ISSN: 2456-3110 **REVIEW ARTICLE** November 2024

esources/Patient_Resources/Fact_Sheets_and_Info_Booklets/Prolactin_Excess.pdf

How to cite this article: Vasanthi Thondambatti, Sanjeev Kadlewad, Archana Panchaxarimath. Conceptualizing Hyperprolactinemia and Ayurvedic Therapeutic Approaches. J Ayurveda Integr Med Sci 2024;11:219-224.
http://dx.doi.org/10.21760/jaims.9.11.31

Source of Support: Nil, **Conflict of Interest:** None declared.

****