TITLE - ROLE OF AYURVEDA IN ANDROPAUSE - A MALE CLIMACTERIC SYNDROME

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Abstract –

Purpose – Andropause is the phase of man’s life which marks the decrease in productions of hormones, particularly the one that controls reproductions. This represents Ageing in males. It is progressive and starts as early as 30 to 65 years of age. When it is precipitates before sixty years of age as per Ayurveda concept it is termed as Akalaja Jara. This Akalaja Jara is considered a Vyadhi (diseased state) and Chikitsa (treatment) should be provide in this condition. The purpose of this study is to understand Andropause in light of Ayurveda and explore its role in prevention and management of this disorders through Rasayana, Vajikarana and Panchakarma.

Methods – The Ayurveda texts were scrutinized to equated Andropause under the light of Ayurveda concept.

Results – The Nidana, Doshika dominance and Samprapti of the disorder was established. The three dimensions of Samaprapti Vighatana, the Nidana Parivarjana, Shodhana and Shamana Chikitsa protocols were developed.
**Conclusion** – The Andropause can be successfully delayed and managed through the lifestyle modifications made on the basis of Ayurveda concept.

**Keywords** - Ayurveda, Andropause, *Akalaja Jara*.

**INTRODUCTION** - A progressive decrease in androgen production is common in aging men. The physiological causes for this phenomenon seem to be multifactorial. The magnitude of the decline in testosterone with age and the prevalence of older men with low testosterone levels have not been well established. Previously the symptoms of Andropause were attributed to symptoms raised due to old age or depression. An interesting fact about it that in women symptoms of menopause starts at the age 40–55 years, whereas in male the symptoms are expressed in the age 35–65 years. Andropause or male menopause is a name that has been given to a supposed menopause-like condition in middle-aged men. This may relate to a reduction of the production of the hormones testosterone and dehydroepiandrosterone in middle-aged men, and the consequences of that reduction, which is associated with a decrease in cells. Other terms used to describe the condition are Viropause, midlife crisis, male climacteric, low testosterone syndrome, symptomatic late onset hypogonadism ("SLOH"), androgen deficiency of the aging male ("ADAM") and partial androgen deficiency in the aging male (PADAM).

**Clinical Manifestations** - Aging in men is generally accompanied by a decrease in general wellbeing; changes in mood with concomitant decrease in intellectual activity; spatial orientation ability fatigue; depression and Anger; decrease in virility, sexual desire and erectile quality; decrease in skin thickness; decrease in Energy; decrease in muscular mass and in strength; an increase in upper- and central-body fat; decrease In bone mineral density resulting in osteoporosis; and decrease in body hair.
Causes - Although all the causes of male menopause have not been fully researched, the main culprit behind the disorder is the declination of testosterone which is attributed due to the fact that physiologically testosterone levels decreases by approximately 1% per year after age 30 [1,2]. At the same time, another factors in the body called Sex Binding Hormone Globulin, or SHBG and circulating levels of estrogen (which competes with testosterone for cellular receptor sites) is increasing. This increased level of SHBG traps much of the testosterone that is still circulating and makes it unavailable to exert its effects in the body's tissues, whereas increased level of estrogen can tilt the testosterone-estrogen balance unfavorably and can reduce the availability of testosterone to target cells. Andropause is associated with low (bioavailable) testosterone levels. Every man experiences a decline of bioavailable testosterone but some men's levels dip lower than others. And when this happens these men can experience andropausal symptoms. Modifications of testosterone levels are found in several diseases and lifestyle disorders. Acute critical illness [3, 4] or surgical injury [5] causes a profound decrease of free testosterone (FT) levels. As far as chronic diseases are concerned, decreased testosterone and sex hormone-binding globulin (SHBG) levels are observed in elderly men with diabetes mellitus, with an inverse correlation between testosterone and plasma glucose [6]. Coronary atherosclerosis has been reported to be associated with low testosterone levels [7]. Chronic renal failure generally induces a hypogonadotropic hypogonadism with impaired pulsatile release of pituitary luteinizing hormone (LH) [8]. Chronic liver disease is accompanied by decreased (FT) levels and increased SHBG [9]. Sleep apnea syndrome, with its hypoxia, is accompanied by lowered testosterone levels, secondary to a hypogonadotropism; these patients are often obese, which may aggravate the hypogonadism. Among drugs that may adversely affect Leydig cell function in the elderly, the frequently used glucocorticoids, as long-term therapy, often induce a
marked suppression of (F)T levels as the result of both testicular and central actions of the drug, as well as a decrease of SHBG levels [10]. Smokers have higher testosterone levels than nonsmokers [11]. Alcohol intake, even without cirrhosis of the liver, may accentuate the age-associated decline of testosterone levels [11]. The influence of diet can influence testosterone levels. Fasting may affect testosterone production through diminished gonadotropic testicular control [11]. Androgen changes with normal male aging the causes for a decline in testosterone production with age are multifactorial. The most important change appears in the testes, where there is a decline and an alteration of Leydig cell number [12]. Moreover, young adult men exhibit a circadian rhythm in their serum levels of total testosterone, with peak levels in the morning and falling slowly by about 35% during the day. This daily fluctuation in serum testosterone is attenuated in older men [13, 14]. The ability of the testes to increase testosterone secretion in response to increased gonadotropin stimulation is also attenuated in older men [15]. There is evidence that age-related alterations in hypothalamopituitary function also contribute to the decline in testosterone production. Elderly men fail to demonstrate an appropriate increase in LH secretion in response to a hypoandrogenic state. Most of older men with low testosterone levels have gonadotropin levels (especially LH levels) that are within the normal range for young adult men, resulting in a relative hypogonadotropic hypogonadism. It has been also clearly demonstrated that the hypothalamopituitary compartment of the gonadal axis is more sensitive to the negative feedback effects of sex hormones than is the case in young adults [16]. A third aspect of the physiopathological mechanisms responsible for the age-related changes in circulating testosterone levels, in addition to primary testicular factors and deficient neuroendocrine feedback regulation, consists of a progressive increase of plasma SHBG binding capacity[17]. The cause of this increase with age remains unclear. A plausible hypothesis is that
the increase in SHBG levels is related to the age-dependent decline in circulating growth hormone or insulin-like growth factor level [17].

**Diagnosis** - The most accepted parameter to establish the presence of hypogonadism are the measurement of total testosterone and free testosterone calculated either from measured total testosterone and SHBG or measured by a reliable free testosterone analysis method. Normal testosterone level are above 12 nmol/L (346 ng/dl), or free testosterone levels above 250 pmol/L (72 pg/ml). The serum total testosterone levels below 8 nmol/L (231 ng/dl) or free testosterone below 180 pmol/L (52 pg/ml) requires treatment. The other parameter for diagnosis is a screening questionnaire developed by St Louis University and Aging Males Symptoms’ (AMS) questionnaire as a rating scale for assessment of symptoms.

**Treatment as per Modern Medicine** The sole treatment of the disorder is HRT (Hormonal Replacement Therapy) or TRT (Testosterone Replacement therapy) or Selective Androgen Receptor Modulator (SARMs), basically these are the terms used to describe the supplementation of testosterone. Current medical treatments for androgen supplementation include oral tablets, intramuscular injections, and scrotal and nonscrotal patches. Unfortunately, none of these preparations mimic the circadian rhythm, even if some of them may approximate the circadian rhythm by dose adjustments. Moreover, the androgen supplementation could have adverse effects on different organs, namely, the liver, lipid profile, cardiovascular disease, prostate, sleep disorders, and emotional behavior. Therefore TRT is unsuitable for patients with breast cancer (in males), Prostate cancer, Prostate hypertrophy, Renal disease, Liver disease, Cardiac or Blood vessel disease, Diabetes mellitus, Patient having allergic reaction to androgen or anabolic steroid, Patient on anticoagulants.
Andropause as per Ayurvedic Context - In Ayurveda there is a concept of *Jaraawastha* (ageing), the last phase of the life span is very commonly known as *Vardhakya*. According to Ayurveda, aging (*Jara*) is a natural phenomenon like that of hunger, thirst, sleep and death [18]. Sushruta has grouped them under the heading of *Swabhava pravritta vyadhies*. Acharya Dalhana has commented over this concept that, this diseases occur due to the power of nature while Acharya Chakrapani has commented that nature of a particular individual depends upon the invisible factors hereditary carried out by that particular race in which he or she is born. It is classified as *Kala Jara* and *Akalaja Jara*. The andropause could be rightly related to the *Akalaja Jara*, in which the ageing process starts before the natural time of onset and the manifestation of the symptoms are severe.

**Nidan** - Causative factors for *Akalaja Jara* causes the *Vatapradhna Tridosha Prakopa* thus causing *Agnimandhya*, *Ama* formation which leads to *Dhatu Kshaya*. In the text nidanas are described in *Charaka chikitsa rasayana pada* which states that due to intake of *Gramaya aahara* sleeping in day time, daily indulgence in sexual activities and alcoholism. Irregular exercises, over exercises, disturbances in body, fear, anger, grief, greediness, *moha*, and laziness lead to *Vatadi Prakopa*.

**Doshik Classification of Symptoms of Andropause** - Depression, fatigue, poor concentration and memory, decreased libido and erectile dysfunction, decreased muscle mass, sleep disturbances, osteoporosis, aches and pain and loss of height due to degenerative changes in vertebral column are *Vata* predominance disorders. Excessive sweating and hot flushes and sleep disturbances are *Pitta* predominance disorders. Gaining in body fat, particularly abdominal weight gain is *Kaphaj* predominance disorders.
Interpretation of Pathogenesis in Context of Andropause - The conclusion drawn by Ayurvedic and modern parlance, it could be considered that due to present day lifestyle, i.e., the diet and physical activity the biological activities of the body gets disturbed, i.e., *Tridosha Prakopa* as a result this the whole system of the body gets shattered down. This result in excessive production of free radicals and there is reduction in rate of its clearance. This further leads to disrupted homeostasis of the hormones resulting in rapid depletion in testosterone production.

At the same time increase in the production Sex Binding Hormone Globulin, or SHBG and estrogen, which results in further depletion of the testosterone and this expresses itself in the form of the symptoms stated above.

**Treatment** - Since it is clear that there is physiologically gradual decrease in the level of testosterone in all males starting in age of 30, but the men do not feels any changes until they are in their 60 ties. But if the symptoms are manifested early and at a faster pace than the due management is required.

In Ayurveda causes, symptoms, signs and treatment of andropause are clearly mentioned in *Rasayan Adhyay Prankamiyama Rasayanpadam*. For treatment of andropause *Urjaskar* drugs such as *Rasayan* and *Vajikaran* should be administered. Purification of body should be done to get maximum result of *Rasayan* and *Vajikaran* in andropause. *Aachar Rasayan* should also be followed in andropause.

So regarding the Ayurvedic management part the following lines of treatment should be followed:-

1. Removable of causative factor
2. Purification of Body
3. Rasayana and Vajikaran Sevana

4. Shaman Chikitsa

**Removal of Causative Factor** - The basic causative of the disease is the disturbed lifestyle as called *Gramaya Aahara and Vihara*, therefore a healthy lifestyle should be followed. Few guidelines are suggested below:

1. Rising early, if possible before sunrise because it is very effective in correction of biologic clock

2. **Regularly intake of exercise** – It will help in making body capable of dealing with physical stress, as well help in enhancing the biological activities in positive mode (Yogic *Kriyas* like *Aasana* and *Pranayamas* are highly effective). The suffers of Andropause should start from a comparative milder form of exercise and when get accustomed should be raised to higher levels. It could be considered as graded exercise therapy.

3. **Following of definite healthy regime-Dincharaya** - In *Dincharaya* the various regimes should be followed regarding life style. Like –

   - *Care of scalp and hair*- regular use of oils (Shiroabhayanga), using natural cleansing products for hair wash (decotion of Triphala Churana with Reeta fruits). It is beneficial for the scalp skin and hairs growth and coloration as well helpful in increasing the blood circulation of the head and neck region which might be possible in correction of the disturbances in the hypothalamic-pituitary-adrenal function which is thought as one of the probable cause.

   - Care of eyes, nose, ears, oral cavity, teeth-daily use of *Anjanas, Pratimarsh Nasya (Tila oil), Karna purana(tila taila), Oushadha Kaval (Jati Patra, Nimba Patra), Sneha Gandush (Sarshapa Taila mixed with Saindava Lavana and Haridra Churna), Dantadhavana (Triphala, Trikatu Trisugandhi Churana with honey) and Mukhaalape*. The basic idea behind the proper
treatment of these natural orifices is that to build up a strong immunological barrier in these regions since everything that enters the body is bypassed through one of these routes.

- Care of body– The whole body should be massaged with Sarsapha oil 15–20 min prior to bath special care should be taken for the foot part. The proper foot massage is quite effective in correcting various physical ailments but the exact mechanism is still obscure. For bathing natural scrubs like Triphala Churana could be used instead of chemical based soaps. If possible use of body temperature equivalent water should be used.

4. **Proper and timely intake of meals**– the food should be natural and in appropriate quantity, much cooked food should be avoided, eating of raw food like fruits and vegetables (properly washed), milk products, dry fruits should be encouraged and avoidance of chemical based food should be done (jams, jellies, sauces, soft drinks, preservative based foods etc.). It is necessary because the whole functioning of the body is dependent on the food that we eat, if the food is not appropriate the chances of getting disease is increased thousand folds. Special precaution should be taken regarding Viruddha Aahara, Aahara Viddhi Vidhan [21].

5. **Proper timing of sleep**– like the food, sleep is also an important and inevitable part of the life cycle. A proper and timely sleep could make a body resistant to most of the psychosomatic disorders. So an individual should try to in bed between 3–6 h after dawn. Because like the other natural beings, human body is regulated by the cycle of day and night and special care should be taken to follow it strictly.

6. **Following of seasonal regime**– special precaution should be taken to follow the seasonal regime called Rita Chary. And more than the Rita Charya, Ritusandhi Charya should be followed because during the course of change of season there is tendency of human body that the immunity gets lower down.
Purification of the Body - In the management part, Shodhana is the second most important point to be considered. The patient should be undergone for Panchakarma procedures like Vaman, Virechana, Basti Karma and Nasya Karma for speedy recovery.

Rasayana Sevana - After the shodhana the next line of management is the administration of Rasayana drugs. This is the step were the excellence of the physician is utilized because for each patient different rasayaana is prescribed as per his body need. Satavari, Shalaparni, Karjura, Ghrita and milk should be used if the patient’s requirement is at nutritious level. If the patient’s requirement is at metabolic level Bhallataka, Pippali, Haritaki, and Chitraka. Swarna, Kasturi, Makaradhwaja, Kupilu Satavari, Shalaparni, Karjura, Ghrita, Dugdha Satavari, Shalaparni, Karjura, Ghrita, Dugdha should be used.

If the patient’s requirement is at assimilation level - Guggulu, Pippali, Rasona should be used. At immunomodulation level - Pippali Rasayanam should be used. For antioxidant properties- Guduchi, Aswagandha and for adaptogenic activity – Satavari, Haritaki, Amalaki and Tulasi should be used. For tissue protection and regeneration - Yastimadhu, Amalaki, Lasuna, Gokshura, Aswagandha and intellect promation and stress relieving – Aswagandha, Brahmi, Sankapuspi, Jatamansi, Bala, Jyotismati and Guduchi and for cell proliferation and regeneration - Aswagandha is used. In the case of andropause the Rasayana drugs are beneficial which have Antioxidant, adaptogenic, anti-anxiety, anti-depression effects. Apart for the oral administration of the Rasayana drugs an important and indispensible form of Rasayana that should be followed is Aachara Rasayana. The various possible mechanisms by which the Aachara Rasayana can influence the total body functions and maintain harmony between mind and body are melatonin mechanism, psycho-immunological axis, psyso-endocrine axis, anti-oxidant property and stress adaptation through –D H E A.
The Rasayana is a specialized type of treatment influencing the Dhatus, Agnis and microchannels of the body leading to an overall improvement in the formation and maintenance of the living tissues and helps in the prevention of ageing, improving of resistance against diseases, bodily strength and process of improving mental faculties. Properties of Rasayana Drug are prevention of senile degeneration, stimulation of metabolism, promotion of body resistance and immunity, improvement in memory and intelligence and increases in vitality. It keeps body free from diseases and restores health and increase long life

Shamana Treatment - It's the last step in the management of the disease and it is majorly based on the symptomology of the individual patient. Like –

1. Fatigue, Joint aches, Muscle aches – could be treated with Abhayanga and Swedana using medicated oils and vapors from medicated decoctions, or either use of Patrapinda or Shalishatika for 21 days or more according to patient’s requirements. In oral medication Guggulu and Mandura preparations should be used.

2. Psychiatric problems, Difficulty sleeping, Difficulty concentrating – These ailments can be dealt by use of Shirodhara using medicated oils, decoctions, Takra Amalaki etc. In oral medications use of Medhya drugs like Sankapuspi, Joytishmati, Brahmi, Vacha, and Aswagandha based preparations should be used.

3. Decreased muscle mass – for this ailments, Kshira Basti and Santarpana diet and drugs (Atmagupta, Shatavari, Musali, Aswagandha, Nagabala, Pippali, testis of goat, Mandukaparni, milk, Kharjura, Draksha, Kashmari, Satavari) Bhrimhana, Balya, and Vayasthapana Mahakshaya is used.
4. **Weight gain**— for these ailments Lekhana Basti, oral administration of *Medohara Guggulu, Chausata Prahari Pippali, and Purnavamandura* in association of regular physical exercise should be done.

5. **Osteoporosis, loss of height**— these ailments can be treated with administration of Ksheera Basti Siddha with Tikta dravya like Panchtikta and Sneha dravya. In oral administration the calcium containing compounds like *Mukta, Mukta shukti, Pravala, Shankha, Godanti, Laksha Guggulu* etc. should be used.

6. **Sweating and hot flashes**— In case of sweating and hot flashes the *Pitta Shamaka* treatment should be done like application of *Sheet pradeha* of Amalki, Ushira, Chandana, Avaghana with Kanji, in oral administration the drugs used should be *Shootshekar Ras, Kamdhugdha Ras, Avipattikar Choorna, Panchnimb Choorna, Amalki Choorna* etc.

7. **Decreased libido and erectile dysfunction**— for this aliment the *Vrishya Basti Siddha* with Ksheera, Ghrita, Mansarasa, Madhur Dravya and orally Vrishya drugs should be administered. They are *Ashwagandha, Shatavari, Shalaparni, Kapikachu, Shukra Janana Mahakshaya* etc. should be administered.

**Scopes of Panchkarma in the Management** Improvement in mood and sense of well-being, decreased anger, irritability, sadness, tiredness, nervousness and improvement in quality of sleep may be through *Abhayanga, Shirodhara* and *Nasya*. Increased mental and physical energy (reduce fatigue) can get through Abhayanga and *Swedana*. For improved libido and sexual performance can get through *Abhayanga, Vrishya Basti* and *Uttar Basti*. For lean body mass, *Abhayanga* and *Brihmana Basti* should be used. For decline in fat mass *Abhayanga* and *Brihaman Basti* should be used. An increase in muscle strength (hand grip, upper and lower
extremities) can get through Patrapinda Sweda, Pizzichil and Shastika Shali pinda Sweda. For increasing bone density Tikta Ksheera Basti should be used.

**CONCLUSION** - Andropause is not the beginning of the end, as most fear, but the end of the beginning," says Jed Diamond, a psychotherapist and author of Male Menopause (Sourcebooks, 1997) "It is the passage to the most passionate, powerful, productive, and purposeful time of a man's life." and the few physical ailments could be dealt easily and cured completely through Ayurvedic principles. The major factor that lies in the treatment part is the lifestyle modification which causes the removal of the root cause of the disease and the remaining parts are dealt with oral medicine and therapeutic procedure. They slow down the process and help to stay active and maintain a more youthful vigor.

**REFERENCES**


