

Review Article

Relation of Obesity with Menstrual Disorders and its Management with Ayurveda

Kajaria Divya^{1*} and Tak Anjna²

¹Department of Kayachikitsa, C.B.P.A.C.S, New Delhi, India.

²Department of Prasuti Tantra, C.B.P.A.C.S, New Delhi, India.

ABSTRACT

The increasing prevalence of medically significant obesity raises great concern especially in females because it not only cause disfigurement but also leads to various gynecological problems. Obesity is more common among women and also women are more prone to be obese than men. The young women contain fat approximately 15% of body weight and it is about more than young man. In that phase of puberty and adolescent due to hormonal changes more fat accumulates in body particularly in females. Thus there is a vice –a –versa relation between hormonal disturbance and obesity. The paper will inquest the cause and effect relationship between obesity and gynecological disorders and will discuss its management through Ayurveda.

Keywords: Dyslipidemia, Steroidogenesis, Aromatization, SHBG.

INTRODUCTION

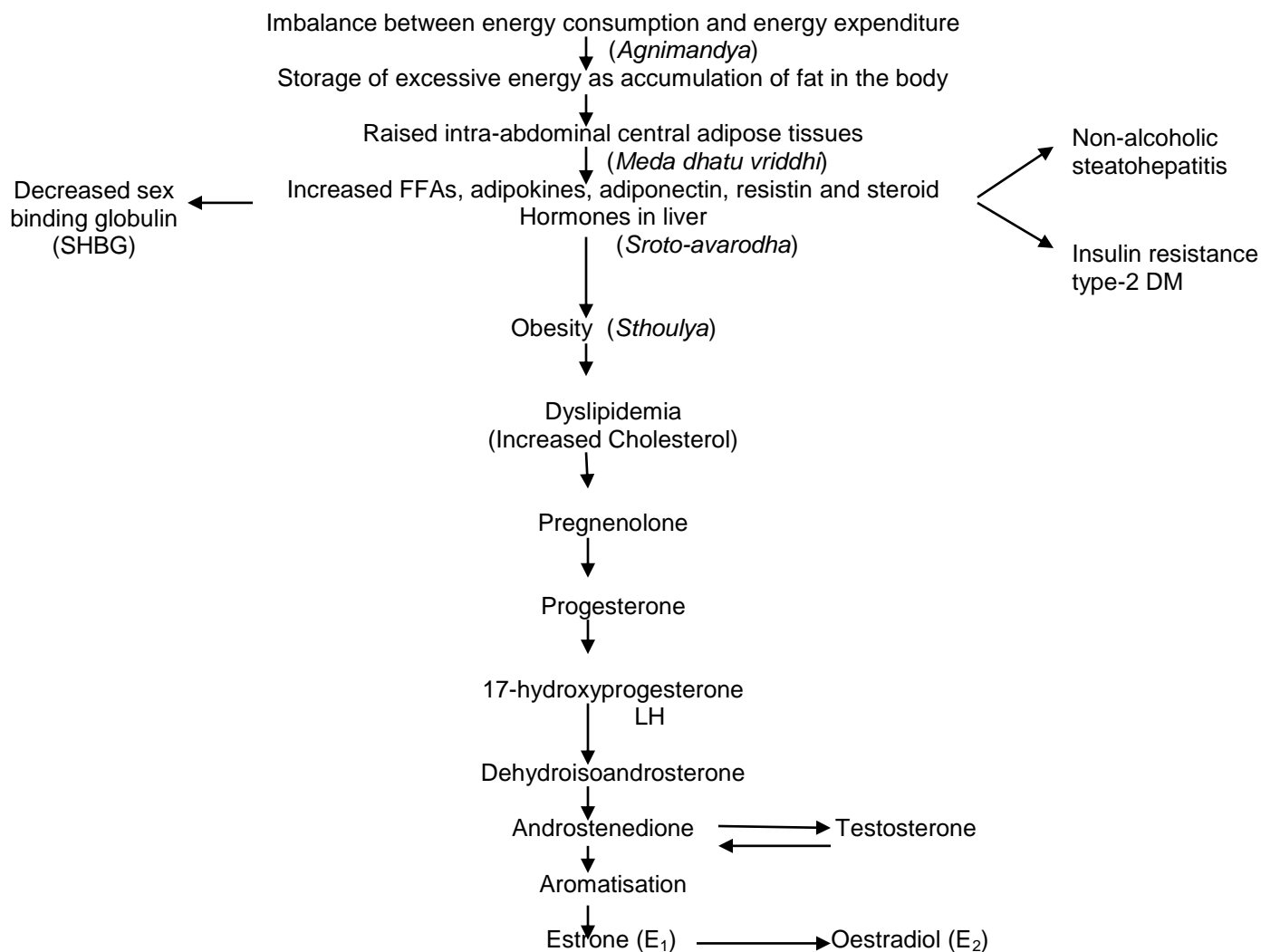
According to Ayurveda an individual whose increased *Meda* (adipose tissue) and *Mamsa* (muscle fibers) *Dhatu* makes his hips, abdomen and breasts pendulous and whose vitality is much less than his body size is known as *Sthaulya* (obese). *Sthaulya* has been classified under "*Ashta Nindita Purusha*" (Ch.Su.21)¹. Acharya Charaka has quoted *Sthaulya* (obesity) under the eight varieties of impediments, which are designated as *Astha-Nindita Purusha* (Ch. Su.21/2)². He also included *Sthaulya* under *Samtarpanajanita Vyadhi* (disease due to overindulgence in fatty diets)(Ch.Su. 23)³. Imbalance between energy consumption and energy expenditure cause accumulation of fat in the body. Obesity is generally defined as having a body mass index (HMI) of 30 or greater. One is considered overweight with a BMI more than 25-30. Obesity as an abnormal growth of adipose tissue due to an enlargement of fat cell size or an increase in fat cell number or a combination of both.

Acharya Charaka says that in *Atisthula* person (obese) excessive growth of *Meda dhatu* (adipose tissues) obstructs the channels (*sroto-avarodha*) and thereby other *dhatu*s are malnourished and gradually depleted. Due to successive depletion of *dhatu*s, *Rasa dhatu* and

its *updhatu- Artava* is depleted and manifested as menstrual disorders.

According to Acharya Charaka *Sthoulya* (obesity) may be congenital or acquired. In *Sthoulya* there is excessive growth of *Meda dhatu* which leads to *Artava dusti*. Cholesterol is the precursor of sex hormone and the process of aromatization (process of converting androgens into estrone) occurs at the level of muscles and adipose tissues. As the obese patients have more adipose tissue in the body, the conversion of androgens into estrone may be altered as compared to the healthy females. In obese persons the predominant estrogen is estrone but as estrone is biologically less (about one-tenth) potent as compared to estradiol the chance of menstrual disturbance may be more. In obesity there may be increased poise frequency of GnRH which leads to increased poise frequency of LH, leptin, a peptide secreted by the fat cells and by the ovarian follicle, in presence of hyperinsulinaemia may be responsible for this. As the GnRH is preferential to LH rather than FSH, it results in tonically elevated LH levels, hence further steroid genesis is disturbed leading to menstrual abnormalities like PCOS etc.

This can be illustrated as follows:-



The above chart shows that obesity leads to dyslipidemia and disturbed steroidogenesis which manifests in different ways as:

1. Polycystic Ovarian Syndrome
2. Menopause
3. Hypogonadism
4. Idiopathic hirsutism
5. Androgen Resistance Syndrome
6. Oligo-ovulation, premature corpus luteum or corpus luteum insufficiency, etc.

Among these various disorders the most commonly encounter is Polycystic Ovarian Syndrome. Menstrual disorders due to obesity is mainly include oligomenorrhoea (*Artavakshaya*). Management of menstrual disorders due to obesity includes use of drugs having *Lekhan* (anti- hyperlipidemic) property with life style modifications. Following herbs can be use for the management of menstrual disorders:-

- **Guggul (*Commiphora mukul*):** Guggul have been proven to be very effective in cholesterol control with none of the side effects of statin drugs. It has been shown that Guggul can lower blood cholesterol by 14-27% and can lower triglycerides by 22-30%. The effects that Guggul has on the blood cholesterol levels are comparable to prescription medications but, being a natural plant extract, it is a far superior and much safer product. Guggul works on the liver by increasing the metabolism (or break down) of the bad cholesterol known as LDL Cholesterol. After taking the product for 4 to 12 weeks, total cholesterol levels can drop triglyceride levels can drop and an increase in HDL (the good cholesterol) of approximately 16% can occur. Its

benefits as a weight-loss and fat burning agent have been well researched and documented⁴.

- **Lahsuna (*Allium sativum*):** In Kashyapa Samhita a full chapter is devoted to Lahsuna Kalpa and Acharya says that all types of menstrual disorder can be cured by it. Naturally occurring Sulphur containing compounds present in the Allium family may influence plasma cholesterol and atherosclerosis⁵. The garlic preparations showed significant reduction on serum cholesterol levels in clinical⁶ as well as experimental studies⁷. A. sativum proved to have significant hypolipidemic activity. It is found to reduce serum cholesterol, triglyceride, LDL-C and atherogenic index.
- **Haridra (*Curcuma longa* Linn.):** Curcumin, a polyphenol present in the rhizomes of turmeric (*Curcuma longa*) spice, influences oxidative and lipid-mediated stress in the vascular system⁸.
- **Haritaki (*Terminalia chebula*):** Haritaki was found to possess significant hypolipidemic activity. It produces significant reduction in total cholesterol, triglycerides, total protein and elevation of high density lipoprotein cholesterol. Haritaki at 1.05 and 2.10 mg/kg b.wt. concentrations are an excellent lipid-lowering agent⁹.
- **Kumari (*Aloe vera*):** The administration of Processed Aloe vera lowered triacylglyceride levels in liver and plasma. Histological examinations of periepididymal fat pad showed that it reduces the average size of adipocytes¹⁰.
- **Shatapushpa (*Foeniculum vulgare*):** Research studies has shown that it has anti-obesity and hypolipidemic properties by virtue of which it is proved to be very useful in obesity related complications¹¹.
- **Shatavari (*Asparagus racemosus*):** A. racemosa is found to have anti-oxidant, hypolipidemic and hypoglycemic activities¹².

DISCUSSION

Sedentary life style and faulty dietary practice causes disturbance in energy equilibrium

leading to acquired obesity and starts an array of complications like metabolic syndrome, Polycystic Ovarian disease, etc. Default lipid genesis produces excessive growth of adipose tissues that in turn causes imbalance in sex hormone. There are various mechanism by which dyslipidemia causes default steroid hormone productions it may be increase aromatization or decreased level of sex hormone binding globulin in liver or increase frequency of GnRH. In Ayurveda Acharya Sushruta (Su. Sa. 2/21) says that aggravated *Vata* and *Kapha* may obstruct the orifice of channels or passage carrying (*Artava- vaha srotas*) destroying *Artava* (amenorrhea/ oligomenorrhea). Bhava Prakash (Bh. Pr. Ch. 70/22) says that articles (food or medicine) capable of increasing *Pitta* are beneficial for the management of *Nastartava/ Anartava* (amenorrhea). In all menstrual disorders use of Lahsuna (*Allium sativum*), Shatapushpa (*Foeniculum vulgare*) and Shatavari (*Asparagus racemosus*) is beneficial. The rationality of using such drugs in menstrual disorders can now be understood. It was presumed that these drugs are helpful in menstrual disorders as they have estrogen stimulating/ synthesis activities but now after re-analyzing the pathogenesis of disease in the light of modern knowledge we come to conclusion that all these drugs have antioxidant, hypolipidemic, hypoglycemic and anti-obesity properties. Striking similarity in the pharmacodynamic properties of drugs describe in Ayurvedic texts for the treatment of Amenorrhea/ Oligomenorrhea shows that in ancient time Acharya were very well known to the fact that default steroid genesis is result of dyslipidemia and that former can't be treated without proper treatment of later.

CONCLUSION

Thus, it can be conclude that in menstrual disorders preferably amenorrhea and oligomenorrhea secondary to obesity hormonal replacement therapy should be adjuvant or better can be replaced by anti-obesity or hypolipidemic treatment methodology (including proper medication and life style modifications).

REFERENCES

1. Charaka Samhita edited by Vaidya Jadavaji Trikamji Acharya Chaukhambha Surbharati Prakashana, 2008, Varanasi. Sutra Sthana 21, Sloke no. 2.

2. 3.Charaka Samhita edited by Vaidya Jadavaji Trikamji Acharya Chaukhambha Surbharati Prakashana, 2008, Varanasi. Sutra Sthana 23.
3. 4.Paul Rosch, Gravelins. National Heart Lung and Blood Institute Center for Medical Consumers.
4. Banerjee SK, Maulik SK. Effect of garlic on cardio- vascular disorders: a review. Nutr J 2002;1(1):4.
5. Andrianova IV, Demidova OM, Medvedeva LA, . Correction of hyperlipidemia with Allicor (Article in Russian) Klin Med (Mosk) 2004;82(4):56–8.
6. Chetty KN, Calahan L, Harris KC. Garlic attenuates hypercholesterolemic risk factors in olive oil fed rats and high cholesterol fed rats. Pathophysiology 2003;9(3):127–32.
7. Jean-Marc Zingg , Syeda T. Hasan, Mohsen Meydani. Molecular mechanisms of hypolipidemic effects of curcumin. BioFactors. 2013. 39(1): 101–121.
8. V. Maruthappan , K. Sakthi Shree. Hypolipidemic activity of Haritaki (*terminalia chebula*) in Atherogenic diet induced Hyperlipidemic Rats. J Adv Pharm Technol Res. 2010. 1(2): 229–235.
9. Kim K, Kim H, Kwon J, Lee S, Kong H, Im SA, et.al. Hypoglycemic and hypolipidemic effects of processed Aloe vera gel in a mouse model of non-insulin-dependent diabetes mellitus. Phytomedicine. 2009.16(9):856-63.
10. Garg Chanchal, Ansari S. H., Khan S. A., Garg Munish. Effect of Foeniculum vulgare Mill. Fruits in Obesity and Associated Cardiovascular Disorders Demonstrated in High Fat Diet Fed Albino Rats. Journal of Pharmaceutical and Biomedical Sciences. 2011. 8(8):1-5.
11. NP Visavadiya, AV R.L. Narasimhacharya. Hypolipidemic and antioxidant activities of Asparagus racemosus in hypercholesteremic rats. Indian Journal of Pharmacology. 2005. 37(6): 376- 380.