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# "CLINICAL EFFICACY OF VYOSHADI GUGGULU IN HYPOTHYROIDISM IN SPECIAL REFERENCE TO SECONDARY OBESITY"

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## ABSTRACT:

The World Health Organization (WHO) recognizes obesity as a chronic, relapsing disease resulting from complex interactions among neurobiological mechanisms, genetic factors, dietary behaviors, food accessibility, market influences, and the broader environmental context. According to recent reports, approximately one in eight individuals worldwide was affected by obesity in 2022.

In India, hypothyroidism is one of the most prevalent endocrine disorders, affecting nearly 10.5% of the population, and frequently coexists with obesity. A strong association exists between obesity and hypothyroidism, and it has been suggested that effective prevention and management of obesity may play a significant role in reducing thyroid-related disorders.

*Acharya Charaka* has broadly described diseases associated with genetic, hereditary, and endocrine etiologies in Ayurvedic literature. Among these, *Atisthula* is considered one of the most undesirable conditions, as it predisposes individuals to multiple serious complications, including diabetes mellitus, hypertension, coronary artery disease, musculoskeletal disorders, dermatological conditions, and anorectal ailments.

Contemporary medical approaches to obesity management focus on both pharmacological therapies and non-pharmacological interventions, including invasive surgical procedures. In contrast, Ayurveda offers a comprehensive therapeutic framework for the management of *Atisthula*, addressing not only the condition itself but also the associated *Srotas* involvement.

When obesity and hypothyroidism coexist, both conditions predominantly involve *Meda Dhatu* and *Rasa Dhatu* vitiation. Therefore, it is rational to adopt a common treatment protocol targeting these shared pathological factors.

**KEY WORDS:-** Apatarpana, Hypothyroidism, Lifestyle changes, Obesity, Meda Dhatu, Shodhana

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## INTRODUCTION

Metabolic syndrome is defined by a group of cardiovascular risk factors, which include excess abdominal fat, high blood pressure, elevated triglyceride levels, low levels of high-density lipoprotein cholesterol, and insulin resistance or impaired glucose tolerance. It is frequently linked to a state that promotes both thrombosis and inflammation[1] Thyroid hormones control basal metabolic rate, thermogenesis, and are crucial in managing lipid and glucose metabolism, as well as influencing food intake and fat oxidation. Dysfunctions of the thyroid are linked to alterations in body weight and composition, body temperature, and both total and resting energy expenditure, regardless of physical activity levels, and a greater incidence of obesity. A new perspective suggests that fluctuations in thyroid-stimulating hormone may actually result from obesity. Elevated leptin levels might contribute to the hyperthyrotropinemia observed in obesity and could heighten the risk of thyroid autoimmunity and subsequent Hypothyroidism[2] Hypothyroidism is a typical obesity-associated disease.[3] The impact of Levothyroxine-T4 treatment in cases of overt hypothyroidism on weight loss is limited; moreover, there is no established evidence supporting the use of thyroid hormones in obese patients who are euthyroid.

Obesity results as a global epidemic, multifactorial in origin and associated with numerous metabolic disorders, creating an imbalance between caloric intake and expenditure, influenced by:[4]

1. Genetics
2. Endocrine disorders
3. Sedentary lifestyle
4. High-calorie diet
5. Leptin resistance
6. Increased adipocyte hypertrophy

**TABLE NO** : 1 Showing Classification For Diagnosis Of Obesity As Per WHO [5]

| Classification of Obesity According As Per WHO | BMI(kg/m2) | Risk of obesity comorbidity |
|---|---|---|
| Normal Range | 18.50-24.99 | negligible risk |
| Overweight | 25.00-29.99 | mildly increased risk |
| Obese<br>Obese class 1<br>Obese class 2<br>Obese class 3 | >30.00<br>30.00-34.99<br>35.00-39.99<br>>40.00 | <br>moderate<br>severe<br>very severe |

Correlation of Hypothyroidism and Obesity from an Ayurvedic Perspective

Hypothyroidism and obesity are not described explicitly in classical Ayurvedic texts and are therefore considered under the category of *Anukta Vyadhi*.(6) A holistic interpretation of these conditions suggests that *Mandagni*, *Kapha Dushti*, and excessive accumulation of *Meda Dhatu* play a central role in their pathogenesis. Integrating Ayurvedic principles into the management of obesity associated with hypothyroidism offers a comprehensive approach that addresses digestion, metabolism, detoxification, and psychological well-being.

According to Ayurveda, obesity (*Sthoulya*) arises due to both external and hereditary factors (*Bijadosha*). External causes include dietary habits and lifestyles that promote *Meda* accumulation, while internal factors involve derangement of *Dosha*, *Dhatu*, *Mala*, and *Srotas*. In the development of *Sthoulya*, all three *Doshas* are involved, with a predominant role of *Kledaka Kapha*, *Pachaka Pitta*, *Samana Vayu*, and *Vyana Vayu*, which together contribute to the *Samprapti* of the disease.

Improperly digested *Anna Rasa* (*Ama*) circulates through the body channels but becomes obstructed in the *Medovaha Srotas* due to *Khavaigunya* resulting from *Bijaswabhava* or *Sharira Shaithilya*. This obstruction, combined with aggravated *Kapha* and *Meda*, leads to diminished *Medo Dhatvagni* and excessive accumulation of *Meda Dhatu*. Impaired *Vyana Vayu* further directs this excess *Meda* to specific anatomical sites such as the *Udara* (abdomen), *Sphik* (buttocks), *Stana* (breasts), and neck region. This process results in conditions like *Sthoulya* and *Atisthoulya*, manifesting with characteristic features including *Chala Sphika*, *Chala Udara*, *Chala Stana*, and *Atimeda-Mamsa Vriddhi*.(7)

Additional clinical manifestations observed in patients with *Sthoulya* include *Ayatha Upachaya*, *Anutsaha*, *Kshudra Shwasa*, *Nidradhikya*, *Gatrasada*, *Gadgada Dhwani*, *Krathana*, *Alpa Prana*, *Sarva Kriyasu Asamarthata*, *Alpa Vyavaya*, *Kasa*, *Shwasa*, *Snigdhangata*, *Udara-Parshva Vriddhi*, *Alasya*, *Ama Moha*, *Saukumarata*, *Anga Shaithilya*, and *Alpa Bala*.

Hypothyroidism, from an Ayurvedic standpoint, is associated with the presence of *Ama* along with the involvement of *Rasa* and *Meda Dhatu*. Hence, *Vyoshadi Guggulu* may be considered an appropriate formulation for managing both conditions. *Vyoshadi Guggulu* comprises *Shunthi*, *Maricha*, *Pippali*, *Chitraka*, *Musta*, *Haritaki*, *Bibhitaka*, *Amalaki*, and *Shuddha Guggulu*. The details of its *Rasa*, *Virya*, *Vipaka*, *Doshaghnata*, *Guna*, and corresponding Latin names are presented in the table below.(8)

**TABLE NO** : 2 **Showing *Rasa, Virya, Vipaka, And Doshagnata* Of *Vyoshadi Guggulu***

| SN | *Dravya* | *Rasa* | *Virya* | *Vipaka* | *Doshagnata* |
|---|---|---|---|---|---|
| 1 | *Shunthi* | *Katu* | *Ushna* | *Madhura* | *Kapha Vataghna* |
| 2 | *Maricha* | *Katu* | *Ushna* | *Katu* | *Kapha Vataghna* |
| 3 | *Pippali* | *Katu* | *Ushna* | *Madhura* | *Vata- Shleshmahar* |
| 4 | *Chitraka* | *Katu* | *Ushna* | *Katu* | *Kaphaghana* |
| 5 | *Musta* | *Tikita Kashaya* | *Sheeta* | *Katu* | *Kapha Pittanashak* |
| 6 | *Haritaki* | *Panchrasa Kashaypradhan* | *Ushna* | *Madhura* | *Tridoshahara Karma-Bruhani, Anulomani,* |
| 7 | *Bibhitaka* | *Kashaya* | *Ushna* | *Madhura* | *Tridoshahara* |
| 8 | *Amalaki* | *Tikita Kashaya* | *Sheeta* | *Katu* | *Kapha Pittanashak* |
| 9 | *Shuddha Guggulu* | *Tikta ,Kashaya ,Katu* | *Ushna* | *Katu* | *Kapha Vataghna* |

**TABLE NO** : 3 **Showing Latin name and *Guna* of *Vyoshadi Guggulu***

| SN | *Dravya* | Latin Name | *Guna* |
|---|---|---|---|
| 1 | *Shunthi* | Zingiber officinale | *Laghu Snigdha Rochana Deepana Vibandhshoolnut* |
| 2 | *Maricha* | Piper nigrum | *Deepana Shwashoolhara Krimihara Kaphavathara* |
| 3 | *Pippali* | Piper longum | *Dipana Yakrututtejak* |
| 4 | *Chitraka* | Plumbago zeylanica | *Vanhikrut Grahani Kusthghna Krimikasanuta Grahi* |
| 5 | *Musta* | Cyperus rotundus | *Grahi, Deepana, Pachana, Jwara, Aaruchinut* |
| 6 | *Haritaki* | Terminalia chebula | *Jvaraghna Kasaghana Kusthghna Arshoghana* |
| 7 | *Bibhitaka* | Terminalia bellirica | *Ruksha Loogha Bhednama Kruminasahanaa Keshya Netrahitam* |
| 8 | *Amalaki* | Emblica Officinalis | *Kapha Pittanashak* |
| 9 | *Shuddha Guggulu* | Commiphora Wightii | *Laghu Vishada Rooksha Sookshma Sara Medomeha Asma Vatamsca Kleda Kustha Amamarutan* |

## DISCUSSION

Hereditary factors (*Bijadosha*), along with dietary habits, lifestyle practices, and psychological influences, contribute significantly to the development of obesity. In addition to these factors, other conditions that disturb *Meda* and *Kapha Dosha* are also considered etiological contributors to obesity. *Dhatvagni Mandya* is recognized as the primary factor in the pathogenesis of *Sthaulya*, along with several associated mechanisms.

*Vyoshadi Guggulu* possesses properties such as *Tikta Rasa* (bitter taste), *Laghu* (lightness), *Ruksha* (dryness), *Tikshna Guna* (sharpness), *Ushna Veerya* (hot potency), and *Katu Vipaka* (pungent post-digestive effect). The bitter taste helps eliminate excess *Kapha* and *Meda* from the *Srotas*, while the pungent taste reduces *Kapha*, enhances *Agni*, and relieves *Srotorodha* (obstruction of channels). These actions facilitate the rapid clearance of blockages and stimulate both *Jatharagni* and *Dhatvagni*.

*Trikatu* enhances the secretion of digestive enzymes, thereby improving enzymatic activity in the small intestine. This leads to better nutrient absorption and assists in the removal of lipid deposits by clearing obstructed *Srotas*, an effect attributed to its active chemical constituent, piperine.(9)

*Triphala* has demonstrated significant anti-obesity effects in experimental studies, including reductions in body weight, serum glucose, total cholesterol, triglycerides, and inflammatory markers in high-fat diet–induced obese animal models. It has also been shown to increase high-density lipoprotein (HDL) levels and adiponectin concentrations. Molecular studies have confirmed the downregulation of key lipogenic genes such as SREBP-1c, PPAR-γ, ACC, ACSS2, and FASN, highlighting its regulatory role in lipid metabolism.(10)

*Guggulu* exhibits *Lekhana* and *Medohara* properties, which help alleviate *Srotorodha* and counteract *Margavarodha-janya Vata Prakopa*, thereby exerting significant *Kapha–Vata*

*Shamaka* effects. The guggulsterones present in *Commiphora mukul* possess anti-inflammatory, antioxidant, and hypolipidemic activities. These compounds reduce oxidative stress, enhance lipid metabolism, and improve thyroid enzyme activity by facilitating iodine uptake and supporting thyroid peroxidase function, thereby potentially aiding thyroid hormone synthesis.(11)

*Musta* contains saponins that have been reported to reduce triglyceride levels by inhibiting pancreatic lipase activity. Additionally, its sesquiterpenes exhibit effective lipid peroxidation–modulating properties.(12)

## CONCLUSION

*Sthaulya* is a *Dushya-pradhana Vyadhi* in which vitiation of *Vata* and *Kapha Dosha*, along with *Meda Dhatu*, plays a major etiological role. This combination increases the severity of the disease and renders *Sthaulya Krichchha Sadhya* (difficult to manage). Among the *Ashtaunindita Purusha*, *Acharya Charaka* describes *Atisthula* as a prevalent metabolic disorder.

High rates of patient dissatisfaction with levothyroxine (LT4) monotherapy, along with findings from several meta-analyses indicating that normalization of thyroid-stimulating hormone (TSH) levels does not necessarily restore all metabolic biomarkers, have raised concerns regarding the adequacy of LT4 monotherapy alone.

Therefore, to mitigate the serious risks associated with obesity and its correlation with metabolic syndrome, Ayurvedic formulations combined with *Shodhana Upakrama* may offer clinically effective therapeutic options.



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Abbreviations:LT4-levothyroxine, TSH-Thyroid Stimulating hormone, HDL-High-density lipoprotein



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