



PRELIMINARY PHYTOCHEMICAL PROFILING OF GOMUTRA HARITAKI VATI AND ITS POSSIBLE RELEVANCE IN THE MANAGEMENT OF STHOULYA

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ABSTRACT

Introduction: Gomutra Haritaki Vati, a classical Ayurvedic formulation composed of Gomutra (cow's urine) and Haritaki (*Terminalia chebula* Retz) is traditionally prescribed for the management of various ailments, including Sthoulya (obesity). Despite its widespread use, there is limited scientific evidence explaining the phytochemical basis underlying its therapeutic effects, particularly concerning obesity and metabolic disorders.

Methods: Gomutra Haritaki vati were procured and subjected to aqueous extraction using the cold maceration method. Preliminary phytochemical screening was performed using standard qualitative tests to identify the presence of bioactive constituents.

Results: The phytochemical analysis revealed the presence of carbohydrates, flavonoids, steroids, saponins, tannins, phenolic compounds, and anthraquinone glycosides in the aqueous extract of Gomutra Haritaki, suggested enhanced digestive and laxative properties, which support the fat metabolism and inhibit the lipid absorption.

Discussion: The phytochemical profile correlates well with the Ayurvedic attributes of Gomutra and Haritaki, particularly their Ushna virya and Kapha-Vata shamaka actions, which are essential in correcting Medovaha Srotas dysfunction implicated in obesity. Bioactive compounds like carbohydrates, flavonoids, steroids, saponins, tannins, phenolic compounds, and anthraquinone glycosides collectively may exert synergistic effects, improving lipid metabolism, reducing adiposity, and enhancing digestion, thereby validating the traditional use of Gomutra Haritaki in obesity management.

Conclusion: This study provides preliminary scientific validation of Gomutra Haritaki's phytochemical constituents and their probable role in managing Sthoulya. Further pharmacological and clinical studies are necessary to elucidate the detailed mechanisms and optimize its therapeutic potential in metabolic disorders.

KEYWORDS: Gomutra haritaki, Sthoulya, Phytochemical screening.

INTRODUCTION

Gomutra Haritaki –

Gomutra Haritaki is a traditional Ayurvedic preparation consisting of two main components: Gomutra (cow's urine) and Haritaki (*Terminalia chebula* Retz). This formulation is widely recommended in classical Ayurvedic literature for managing conditions such as Arsha, Granthi, Arbuda and Sthoulya etc.⁽¹⁾ Gomutra is esteemed in Ayurvedic pharmacology as a leading agent in the Mootravarga, it exhibits properties such as Agnideepaka, Medhya, and Kapha-Vata shamaka. It is applied in treating numerous ailments, including Kushta, Shwasa, Kasa, Kamala, Pandu, and other disorders primarily involving Kapha and Vata imbalances.⁽²⁾

Haritaki botanically identified as *Terminalia chebula* Retz, belonging to the family Combretaceae, is well known for its broad-spectrum efficacy, Haritaki is commonly used in conditions affecting the Annavaha and Purishavaha sroto vikaras. Haritaki is having Karmas like Pachana, Deepana, Lekhana, Vatanulomana etc. Mainly it contains chebulic acid, a compound that supports fat metabolism and inhibits lipid

absorption, making it beneficial in weight management and metabolic disorders.⁽³⁾ It is also attributed with pharmacological activities like carminative, purgative, digestive etc.(Table 1)

Obesity is defined as having a Body Mass Index (BMI) of 30 or higher.⁽⁵⁾ It is characterized by an excessive accumulation of fat in the body, which can lead to adverse health outcomes, reduced life expectancy, and increased risk of chronic diseases. Global estimates suggest that the prevalence of obesity has become a pandemic⁽⁶⁾ and increasing continuously.

Obesity in Ayurveda

In Ayurveda, Atisthoulya is listed among the Ashta Nindita Purusha⁽⁷⁾ eight types of individuals considered contemptible due to imbalances in physical constitution. Out of these, six are Loka Nindita and two are Chikitsya Nindita namely Atisthoulya and Atikrisha. Also, Acharya Charaka mentions that people who are Atisthoulya are more liable to be at a health risk than Atikrisha.⁽⁷⁾

Atisthoulya is described as the excessive accumulation of Meda and Mamsa, leading to the flabbiness of the hips, abdomen, and breasts etc. It is considered a Santarpanottha



Vikara, a disease arising from the over consumption of calories or nourishment. Disorders related to *Medodushti* are recognized as risk factors for ischemic heart disease and many more. According to *Ayurvedic* principles, obesity is a disorder of the *Medovaha Srotas* and involves *Medodhatu*.

Two types of *Meda Vriddhi* (increase in fat tissue) are described⁽⁸⁾

- *Baddha (Posya) Meda Vriddhi*: Leads to adiposity (obesity)
- *Abaddha (Posaka) Meda Vriddhi*: Leads to dyslipidemia

Obesity or *Sthoulya*, not only has significant health implications but also contributes to psychological distress. Individuals suffering from obesity often experience shame or embarrassment due to their body size, further emphasizing the need for both medical and psychosocial intervention. Obesity, increasingly prevalent across all age groups, is a major contributor to secondary health issues such as ischemic heart disease, diabetes, and hypertension. *Ayurveda* offers holistic approaches to managing obesity, emphasizing the balance of *Doshas* and metabolic health. One notable *Ayurvedic* formulation is *Gomutra Haritaki*, which combines *Gomutra* with the fruit *Haritaki* (*Terminalia chebula* Retz). This classical remedy is recognized for its potential in addressing obesity and related metabolic disorders.

Gomutra Haritaki has been traditionally and effectively used in the management of *Sthoulya* due to its reputed properties such as *Lekhana*, *Deepana*, and *Medohara*. While its clinical efficacy is well recognized and documented in classical texts, the underlying mechanisms of action have not been thoroughly investigated through modern scientific parameters. Despite its extensive therapeutic use, there is a significant gap in the understanding of *Gomutra Haritaki* at the phytochemical levels. Therefore, this study was undertaken to investigate the phytochemical composition of *Gomutra Haritaki*, with the objective of correlating its traditional claims of anti-obesity effects with scientifically validated constituents.

Materials and Methods

Collection of formulation – *Gomutra Haritaki* tablets were purchased from Punarvasu pharmacy Gujarat.

Extract preparation – 5 g of the coarse powder of the sample was weighed accurately in a glass stoppered flask. 100 ml of distilled water was added, shaken occasionally for 6 hours. Allowed to stand for 18 hours. Filtered rapidly taking care not to lose any solvent.⁽⁹⁾

Preliminary phytochemical analysis – Prepared extract was tested for the preliminary phytochemicals by performing various tests mentioned.⁽¹⁰⁾

OBSERVATION AND RESULTS

Preliminary phytochemical analysis

The medicine *Gomutra Haritaki* was collected and aqueous extract was prepared by cold maceration method, then the preliminary phytochemical analysis was conducted according to the standard procedure mentioned⁽¹⁰⁾ and results are tabulated in Table 2.

DISCUSSION

The aqueous extract of *Gomutra Haritaki* was selected for phytochemical analysis as it closely reflects the traditional method of preparation. It is generally administered in a form that involves decoction or aqueous processing. This reflects the natural method of extraction used in traditional medicine systems, where water is the most commonly employed solvent for preparing herbal formulations. The preliminary phytochemical analysis of aqueous extract of *Gomutra Haritaki* revealed the presence of several bioactive constituents such as carbohydrates, flavonoids, steroids, saponins, tannins, phenolic compounds, and anthraquinone glycosides. The presence of flavonoids and phenolic compounds is significant as these phytochemicals are well-known for their antioxidant and anti-inflammatory properties⁽¹¹⁾, which may contribute to the formulation's efficacy in managing metabolic disorders including obesity. Flavonoids have been documented to enhance lipid metabolism and reduce adiposity by modulating enzymes involved in fat synthesis and breakdown.⁽¹²⁾

Steroids, detected through Salkowski and Liebermann-Burchard reactions, may influence hormonal balance and metabolic rate, potentially aiding in the reduction of excessive fat accumulation⁽¹³⁾. Saponins are known to exert lipid-lowering effects by inhibiting intestinal absorption of cholesterol⁽¹⁴⁾, which aligns with the anti-obesity effects attributed to *Gomutra Haritaki*.

The presence of tannins and anthraquinone glycosides suggests additional therapeutic properties, including improved digestion and laxative effects⁽¹⁵⁾, which could support the elimination of metabolic wastes and toxins, thereby assisting weight management. The carbohydrates detected may act as a supportive energy source and may also contribute to the bioavailability of other active components.

Gomutra and *Haritaki* both are *Laghu Ruksha Guna*, *Ushna Virya*, *Katu Tikta* and *Kashya* as common *Rasa* among the two ingredients and *Kapha-Vata shamaka* properties align with the phytochemical findings, suggesting that the formulation acts by stimulating metabolism, improving *Agni* and correcting *Dosha* imbalances, particularly in *Medovaha Srotas*, which are involved in fat metabolism. Also, the *Laghu Ruksha Guna*, *Katu Tikta Rasa* and *Ushna virya* which counteracts the *Guru*, *Snigdha* and *Sheeta* qualities of aggravated *Meda* and *Kapha* thereby promoting *Kapha-Meda Shamana*, *Srotoshodhana*, *Agni/Medodhatvagni* improvement and *Medo Shoshana Karma* which will help in treating the diseases related to the *Medovahasrotas*.⁽¹⁶⁾

Therefore, the phytochemical constituents identified in *Gomutra Haritaki* provide a scientific basis for its traditional use in managing *Sthoulya* and associated metabolic disorders.

CONCLUSION

The phytochemical evaluation of *Gomutra Haritaki Vati* confirms the presence of multiple bioactive compounds such as Flavonoids, Steroids, Saponins, Tannins, Phenolic compounds, Carbohydrates and Anthraquinone glycosides. These constituents collectively may contribute to its traditional efficacy in the management of *Sthoulya* by enhancing lipid metabolism,



reducing fat accumulation, and improving digestion. This study provides a preliminary scientific validation supporting the use of *Gomutra Haritaki* for obesity management. Further

pharmacological investigations and clinical trials are essential to substantiate these findings and optimize its therapeutic application in *Sthoulya*(Obesity) and related metabolic disorders.

TABLES

Table 1 : Rasapanchaka of Gomutra and Haritaki⁽⁴⁾

Rasapanchaka	Gomutra	Haritaki
Rasa	<i>Katu, Tikta, Kashaya</i>	<i>Kashaya, Tikta, Madhura, Katu, Amla</i>
Guna	<i>Laghu, Tikshna</i>	<i>Ruksha, Sara</i>
Virya	<i>Ushna</i>	<i>Ushna</i>
Vipaka	<i>Katu</i>	<i>Madhura</i>

Table 2: Result of Preliminary phytochemical analysis of Gomutra Haritaki

Tests	Aqueous extract of <i>Gomutra Haritaki</i>
Carbohydrates	
• Fehling's test	+
• Benedict's test	+
Amino acids	
• Ninhydrin test	—
Flavonoids	
• Sulphuric acid test	+
Steroids	
• Salkowski reaction	+
• Libermann -Burchard reaction	+
Saponins	
Foam test	+
Alkaloids	
• Dragendorff's test	—
• Mayer's test	—
• Wagner's test	—
Tannins and phenolic compounds	
• Lead acetate solution	+
Anthraquinone glycosides	
• Borntrager's test	+

+ :Present; - :Absent

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Conflict of Interest

The authors declare no conflicts of interest related to the preparation of this manuscript.

Funding

The authors declare that this work received no specific funding from public, private, or commercial sources.