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ANTI-OBESITY DRUGS OF BHAVAPRAKSHA NIGHANTU: A LITERARY SURVEY

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ABSTRACT

Obesity is one of the leading cause for more than 53 diseases and in India around 30 millions people are suffering with obesity. Individual habits with stressful life, wrong dietary habits, and sedentary life is the main cause of disease and no satisfactory treatment is available in conventional system. Hence there is need to explore alternative system of Indian medicines like Ayurveda for the benefits of sufferers. Ayurveda dealt this disease as Stoulya (Obesity) under Medoroga (Adipose tissue disorder) and many treatment modalities have been explained. Numbers of drugs in Bruhatrayi (Charaka, Sushruta and Vagbhat) were cited. Bhavamisra was the author of Bhavaprakash nighantu (Lexicon) which is one of the Laghutrayis (Sharanghadara, Madhava nidana and Bhavaprakash). Text is highlighted with Karmaoushadi (action based drugs) and considered as drug index of Ayurveda. Thus present study was designed to screen the drugs with properties of Kapha Medohara (Ability to reduce Kapha and Fat), Medorogahara (reduces adipose tissue), Sthoulyanaashaka (Anti obesity) and Karshyakara (Ability to make lean) from Bhavaprakash nighantu. Since these actions were well thought-out in the treatment of obesity. Out of 426 drugs, 54 were described for the treatment of disease and were scattered throughout the text which include herb, mineral and animal origin. These screened drugs were the handy reference for the treatment of Stoulya (Obesity).

Keywords: Obesity, Stoulya, Drugs, Bhavaprakash nighantu, Ayurveda

INTRODUCTION

Obesity is a blessing of the Modern age of Machines and Materialism. Obese is a person with a body mass index (BMI) over 30 kg/m². Globally, there are more than 1 billion overweight adults out of them more than 300 million are clinically obese¹. In India approximately 30 million peoples are overweight and obesity². Obesity is not a simple problem since it has capacity to trigger approximately 53 diseases. This is one of the primary cause of non-communicable diseases (NCDs)³. Causes of obesity include lack of physical activity with increased intake of food, industrialization, stress during the work and dietary habits especially fast food, Frozen fruits, increased amount of soft drinks and beverages, canned foods etc⁴. Dietary control, behavioral modification, drug therapy and surgical were the modes in which it is managed in conventional system⁵. In spite of its treatment, the success of treatment is mysterious⁶.

Obesity is the most common metabolic disorder and this is one of the oldest documented diseases. In Ayurveda as early as 1500 BC Charaka Samhita described this disorder under the title Stoulya (obesity) and Medoroga (disease of fat) or diseased state of fat metabolism⁷. This disease is a state in which increased adipose and muscle tissue of an individual make his hips, abdomen and breasts pendulous and whose vitality is much less than his body size⁸. In fact, Atisthula and Atikrusa were the conditions which are favorable to get diseases⁹. Hence Acharya Charak has grouped this condition under Nindita Purusha (undesirable constitution)⁷.

Management in Ayurveda

Apatarpana chikitsa (emaciation therapy) is the line of treatment adopted in this disease which includes Langhana (fasting therapy), Rukshana (drying therapy) and Swedana (fomentation therapy)¹⁰. In fact more

highlighted to use of Ruksha (rough), Kaphamedo hara (ability to reduce Kapha and fat) drugs and Lekhana (scrapping)¹¹.

Bhavamishra specifically stated to utilize the drug with actions of Lekhana¹² (scrapping), Medagna (anti-adipose tissue)¹³, Kaphamedagna (ability to reduce Kapha and fat)¹⁴, Stoulya nashaka (anti-obesity)¹⁵ in Stoulya vyadhi adhikara and these karmas (actions) were the principle elements of Apatarpana chikitsa (emaciation therapy) of Charaka.

Many drugs were described for the treatment of this disease in Ayurvedic classics and it is limited in Bruhatrayi (Charaka, Sushruta and Vagbhata) and extended drugs can be seen in later authors of Ayurveda such as Bhavaprakash nighantu (lexicon), Sharanghadhara samhita etc. Hence present work was planned to review and explore the potential drugs for the management of obesity from Bhavaprakash nighantu (lexicon).

Basically, Nighantu (lexicons) are considered as the complete reference book for Indian medicines of all categories including herbs, minerals and animal products. These are the specific text dedicated for study of all aspects of drugs from their place of origin to their pharmacological actions¹⁶. The study of Lexicon is correlated with Bhaishajya kalpana (pharmacy) as the later one depends upon the lexicon for the knowledge of drugs and their pharmacological properties.

About text

The most appreciated text among lexicon is Bhavaprakash Nighantu, written in 16th century by Bhavamishra because the Lexicons which are found to be developed later on are based upon Bruhatrayi and Bhavaprakash is deemed to developed this from all samhita (text) and scientifically used for various classification of the drugs found in ancient drug related text of Ayurveda. First part of this

lexicon part (Nighantu) includes explanation of 426 drugs in 22 vargas (classification)¹⁷. Author was the Pioneer of Drug Abhava pratinidhi dravyaas (Substitutes) i.e Astavarga and its substitutes and added new drugs to Ayurvedic pharmacopeia e.g. Dwipantara vacha (Smilax china) to Ayurveda¹⁸. In Dravyaguna shastra (pharmacology) all the definitions related with action of drugs started from charaka than vagbhata up to lexicon are the same which are used in modern Ayurvedic pharmacy. More than 1750 action words were used in the text hence this text is considered as Karmoushadhi Pradhan nighantu (drugs with therapeutic action) and also as Drug Index of Ayurvedic clinical pharmacology.

Drugs from whole Bhavaprakash Nighantu were screened for the properties of Kapha Medohara (Ability to reduce Kapha and Fat), Medo nashaka (reduce adipose tissue), Medorogahara (reduce disease of adipose tissue), Sthoulyanaashaka (Anti-obesity), Karshyakara (Ability to make lean) and Lekhana (scarping). Obtained data were presented as per anti-obesity action with respect to herbal, animal, mineral origin and also drugs which are belong to

different Varga (chapter wise) with its corresponding references.

Out of 426 drugs in text a total of 54 (12.67%) were used for the treatment of Stoulya (obesity). Out of which Kaphamedo hara were 21(38.8%), Medo nashaka 7 (12.96%), Medorogahara (Anti obesity) 2 (3.7%), Sthoulyanashaka (anti-obesity) 1(1.85%), and Karshyakara Karshyakara (Ability to make lean) were 2 (3.7%), Lekhana (scarping) 21(38.8%). (Table 1)

Out of 22 vargas only 10 (45.45%) were Sthoulya nashaka (anti-obesity) drugs. Out of which Harithakyadi varga contained 4 single drugs and one combination (Table 2), Karpooaraadi Varga contained a total of 3 drugs (Table 3), Guduchyaadi Varga 7 (Table 4), Vataadi Varga 7 single and one herbal combination (Table 5), 2 in Amradiphala Varga (Table 6), 11 were from Lohadi varga (Table 7), 6 Dhanya Varga (Table 8), 3 Krutaanna (food varga preparations) Varga (Table 9), 3 Taila varga (Table 10) followed by 1 from Madhu varga (Table 11).

Pushpa, Shaka, Mamsa, Vari, Dugdha, Dadhi, Takra, Navneeta, Grutha, Mutra, Ikshu, and Sandhana vargas were devoid of anti-obesity drugs

Table 1: List of Anti-obesity drugs with respect to its origin

SN	Anti-obesity action	Drug with respect to origin			Total number
		Herbal	Animal	Mineral	
1.	Kaphamedo hara (Ability to reduce Kapha and adipose tissue)	Pippali (<i>Piper longum</i>), Kantakaari Phala (<i>Solanum xanthocarpum</i>), Snuhi (<i>Euphorbia nirifolia</i>), Paaribhadra (<i>Erythrina indica</i>), Shigru (<i>Moringa oleifera</i>), Yavasa (<i>Fegonia cretica</i>), Mundi (<i>Spiranthus indica</i>), Apamarga (<i>Acaranthus aspera</i>), Pancha valkala (Combination of <i>Ficus bengalensis</i> , <i>F. religiosa</i> , <i>F. racemosa</i> , <i>F. lacar</i> and <i>Thespesia populnea</i>), Kuta Shalmali (<i>Ceiba pentandra</i>), Moksha (<i>Schrebera swieteniodes</i>), Tinisha <i>Ougeinia dalbergioides</i>), Phanasa (<i>Artocarpus heterophyllum</i>), Maasha (<i>Phaseolus mungo</i>), Kulathya (<i>Dolichos biflorus</i>), Laaja (Paddy fried), Holaka (Frying any un ripen Shamidhanya), Sarshapa tail (Mustard oil)	Gomutra (cow urine), Purana Madhu (old honey)	Ayaskaanta,	21 (38.8%)
2.	Medo nashaka (Anti- adipose)	Granthiparna (Variety of Choraka), Khadiira (<i>Acacia catechu</i>), BhurjaPatra (<i>Butea utilis</i>), Yava (<i>Hordeum vulgare</i>), Kanguni (<i>Setaria italica</i>), Tuvari taila ((Hydnocarpus oil)	Takra (butter milk)	-	7 (12.96%)
3.	Sthoulyanashaka (reduce obesity)	Trikatu (mixture of <i>P. nigrum</i> , <i>P. longum</i> and <i>Zingiber officinale</i>)	-	-	1 (1.85%)
4.	Karshyakara (Ability to make lean)	Dhanyaka (<i>Coriander sativa</i>), Gavedhuka (<i>Coix lachymajobi</i>),	-	-	2 (3.7%)
5.	Medorogahara (Anti obesity) (reduce disease of adipose tissue)	Sinshupa (<i>Dalbergia sisso</i>), Arjuna (<i>Terminalia arjuna</i>)	-	-	2 (3.7%)
6.	Lekhana (scarping)	Madanaphala (<i>Randia dumetorum</i>), Karpooara (<i>Cinnamomum camphora</i>), Purana guggulu (old <i>Commiphora mukul</i>), Pancha valkala (Combination of <i>Ficus bengalensis</i> , <i>F. religiosa</i> , <i>F. racemosa</i> , <i>F. lacar</i> and <i>Thespesia populnea</i>), Unripe fruit of Kapitha (<i>Feronia limonia</i>), Ksudra Dhanya (Inferior grains), Pinyaak (powder of seasum), Tila tail (Seasum oil)	Samudra phena (Cuttlefish)	Rajata (silver), Tamra (copper), Loha (iron), Mandura (iron oxide), Roupya, makshika (Chalcopryrite), Tuthya (Copper sulphate), Kharpara (variety of Copper sulphate), Kaansya (Bronze), Manashila (Realgar), Valuka (sand)	21 (38.8%)

Table 2: Anti-obesity drugs of Hareetkyaadi Varga with respective reference

No	Drug name	Action of the Drug	Corresponding reference [#]
1	Pippali (<i>Piper longum</i>) with honey	Meda Kaphanashini	B.P.N. 1/57
2	Trikatu (mixture of <i>P. nigrum</i> , <i>P. longum</i> and <i>Zingiber officinale</i>)	Kapha Stoulya Medohara (Anti obesity and Ability to reduce Kapha and Fat)	B.P.N. 1/63
3	Dhanyaka (<i>Coriandrum sativum</i>)	Karshyakara (Ability to make lean)	B.P.N. 1/88
4	Samudraphena (Cuttlefish)	Lekhana (scarping)	B.P.N. 1/119
5	Madanaphala (<i>Randia dumetorum</i>)	Lekhana (scarping)	B.P.N. 1/161

- B.P.N- Bhavaprakash Nighantu, First no is corresponding number of varga, and second number is respective verse.

Table 3: Anti-obesity drugs of Karpooraadi Varga with respective reference

No	Drug name	Action of the Drug	Corresponding reference [#]
1	Karpoora (<i>Cinnamomum camphora</i>)	Lekhana (scarping)	B.P.N. 2/2
2	Puraana Guggulu (old <i>Commiphora mukul</i>)	Atilekhana (scarping)	B.P.N. 2/42
3	Granthiparna (Variety of Choraka) (<i>Polygonum aviculare</i>)	Medahara (Anti obesity)	B.P.N. 2/108

- B.P.N- Bhavaprakash Nighantu, First no is corresponding number of varga, and second number is respective verse.

Table 4: Anti-obesity drugs of Guduchyaadi Varga with respective reference

No	Drug name	Action of the Drug	Corresponding reference [#]
1	Kantakaari phala (<i>Solanum xanthocarpum</i>)	Kapha Medohara (Ability to reduce Kapha and Fat)	B.P.N. 3/42
2	Snuhi (<i>Euphorbia niriifolia</i>)	Kapha Medohara (Ability to reduce Kapha and Fat)	B.P.N. 3/75
3	Paaribhadra (<i>Erythrina indica</i>)	Kapha Medohara (Ability to reduce Kapha and Fat)	B.P.N. 3/100
4	Shigru (<i>Moringa oleifera</i>)	Kapha Medohara (Ability to reduce Kapha and Fat)	B.P.N. 3/107
5	Yavasa (<i>Fegonia cretica</i>)	Kapha Medohara (Ability to reduce Kapha and Fat)	B.P.N. 3/213
6	Mundi (<i>Spiranthus indica</i>)	Medo Rogahara (Reduce disease of adipose tissue)	B.P.N. 3/218
7	Apamaarga (<i>Acaranthus aspera</i>)	Kapha Medohara (Ability to reduce Kapha and Fat)	B.P.N. 3/220

- B.P.N- Bhavaprakash Nighantu, First no is corresponding number of varga, and second number is respective verse.

Table 5: Anti-obesity drugs of Vataadi Varga with respective reference

No	Drug name	Action of the Drug	Corresponding reference [#]
1	Pancha valkala (Combination of <i>Ficus bengalensis</i> , <i>F. religiosa</i> , <i>F. racemosa</i> , <i>F. lacar</i> and <i>Thespesia populnea</i>)	Kaphamedogna (Ability to reduce Kapha and Fat), Lekhana (scarping)	B.P.N. 5/16
2	Sinshupa (<i>Dalbergia sisso</i>)	Medorogahara (Anti obesity)	B.P.N. 5/25
3	Arjuna (<i>Terminalia arjuna</i>)	Medorogahara (Anti obesity)	B.P.N. 5/27
4	Khadira (<i>Acacia catechu</i>)	Medogna (Anti obesity)	B.P.N. 5/31
5	BhurjaPatra (<i>Butea utilis</i>)	Medohara (Anti obesity)	B.P.N. 5/48
6	Kuta Shalmali (<i>Ceiba pentandra</i>)	Kaphamedohara (Ability to reduce Kapha and Fat)	B.P.N. 5/59
7	Moksha (<i>Schrebera swietenoides</i>)	Kaphamedohara (Ability to reduce Kapha and Fat)	B.P.N. 5/70
8	Tinisha (<i>Ougeinia dalbergioides</i>)	Kaphamedohara (Ability to reduce Kapha and Fat)	B.P.N. 5/76

- B.P.N- Bhavaprakash Nighantu, First no is corresponding number of varga, and second number is respective verse.

Table 6: Anti-obesity drugs of Amradiphala Varga with respective reference

No	Drug name	Action of the Drug	Corresponding reference [#]
1	Phanasa (<i>Artocarpus heterophyllum</i>),	Kaph medhovivardhana (Ability to reduce Kapha and Fat)	B.P.N. 6/27
2	Un ripen Kapitha (<i>Feronia limonia</i>) fruit	Lekhana (scarping)	B.P.N. 6/62

- B.P.N- Bhavaprakash Nighantu, First no is corresponding number of varga, and second number is respective verse.

Table 7: Anti-obesity drugs of Dhatu Varga with respective reference

No	Drug name	Action of the Drug	Corresponding reference [#]
1	Rajata (Silver)	Lekhana (scarping)	B.P.N. 7/20
2	Tamra (Copper)	Lekhana (scarping)	B.P.N. 7/26
3	Loha (Iron)	Lekhana (scarping)	B.P.N. 7/41
4	Mandoor (iron slag)	Lekhana (scarping)	B.P.N. 7/52
5	Roupya makshika (Chalcopyrite)	Lekhana (scarping)	B.P.N. 7/64
6	Tuthya (Copper sulphate)	Lekhana (scarping)	B.P.N. 7/64
7	Kharpara (variety of Copper sulphate)	Lekhana (scarping)	B.P.N. 7/68
8	Kaansya (Bronze)	Lekhana (scarping)	B.P.N. 7/71
9	Manashila (Realgar)	Lekhana (scarping)	B.P.N. 7/133
10	Chumbaka Tankana (Magnetic iron ore)	Medorogahara (Anti obesity)	B.P.N. 7/145
11	Vaaluka Gairika (Sand)	Lekhana (scarping)	B.P.N. 7/150

- B.P.N- Bhavaprakash Nighantu, First no is corresponding number of varga, and second number is respective verse.

Table 8: Anti-obesity drugs of Dhanya Varga with respective reference

No	Drug name	Action of the Drug	Corresponding reference [#]
1	Yava (<i>Hordeum vulgare</i>)	Medapranaashini (Anti obesity)	B.P.N. 8/30
2	Maasha (<i>Phaseolus mungo</i>)	Medakaphaprada (Ability to reduce Kapha and Fat)	B.P.N. 8/42
3	Kulathya (<i>Dolichos biflorus</i>)	Kapha Medohara (Ability to reduce Kapha and Fat)	B.P.N. 8/62
4	Ksudra Dhanya (Inferior grains)	Lekhana (scarping)	B.P.N. 8/74
5	Kanguni (<i>Setaria italica</i>)	Kaphamedahar (Ability to reduce Kapha and Fat)	B.P.N. 8/77
6	Gavedhuka (<i>Coix lachymajobi</i>)	Karshyakara (Ability to make lean)	B.P.N. 8/85

- B.P.N- Bhavaprakash Nighantu, First no is corresponding number of varga, and second number is respective verse.

Table 9: Anti-obesity drugs of Krutaanna (food preparations) Varga with respective reference

No	Drug name	Action of the Drug	Corresponding reference [#]
1	Laaja (Paddy fried)	Kapha Medohara (Ability to reduce Kapha and Fat)	B.P.N. 11/175
2	Holaka (Frying any un ripened <i>Shami Dhanya</i>)	Kapha Medohara (Ability to reduce Kapha and Fat)	B.P.N. 11/178
3	Pinyaak (Powder of seasum)	Lekhana (scarping)	B.P.N. 11/183

- B.P.N- Bhavaprakash Nighantu, First no is corresponding number of varga, and second number is respective verse.

Table 10: Anti-obesity drugs of Tail varga with respective reference

No	Drug name	Action of the Drug	Corresponding reference [#]
1	Tila tail (seasum oil)	Lekhana (scarping)	B.P.N. 19/4
2	Sarshapa tail (Mustard oil)	KaphaMedogna	B.P.N. 19/14
3	Tuvari taila (Hydnocarpus oil)	Medodoshahara (Reduce disease of adipose tissue)	B.P.N. 19/16

- B.P.N- Bhavaprakash Nighantu, First no is corresponding number of varga, and second number is respective verse.

Table 11: Anti-obesity drugs of Madhu varga with respective reference

No	Drug name	Action of the Drug	Corresponding reference [#]
1	Madhu varga	Purana madhu (honey)- Ati Lekhana (scarping)	B.P.N. 21/25

- B.P.N- Bhavaprakash Nighantu, First no is corresponding number of varga, and second number is respective verse.

DISCUSSION

Bhavamishra has given special attention to the disease Stoulya (obesity) and used many drugs to treat this disease. Present study of author has used additional extended drugs from Bruhatrayis.

Present study suggested that author has concentrated more on herbal origin drugs rather than other varieties (Table 1).

Lekhana (scraping) and Kaphamedo hara (ability to reduce Kapha and fat) drugs were compared more than other since these are the basic tools of therapy where success of this disease can achieved^{12,14}. Even though, Ayurveda used different parts of plants such as fruits, flowers, roots etc¹⁹ but our review showed that Stouly hara (anti-obesity drugs) were more of roots, fruits, and bark. No flowers and milk product (except butter milk) were used, since milk product are known to increase Kapha²⁰ and flowers are Saumya (soft) and Shita guna (cold in potency)²¹ have capacity of increase the kapha and Meda (Fat). Ikshu (sugar derivatives) and Mamsa varga (non-vegetarian) were also devoid of anti-obesity action since these are known to cause bulkiness of body²². Katu (pungent), Tikta (bitter) and Kashaya (astringent) taste drugs were compared more than other taste due to Stoulya nashaka (anti-obesity)²³, Lekhana (scraping), Agni deepana (appetizer) and kaphahara (reduce kapha) properties of Katu rasa (pungent)²⁴, Lekhana (scraping), Dathu shoshana (reduce tissues), and Medoroga hara (can cure disease of fat) properties of Tikta rasa (Bitter)²⁵ and Lekhana (scraping), Medohara (anti-obesity) properties of Kashaya (astringent) drugs.

Many drugs were added and few were deleted from the list of anti-obesity drugs of bruhatriyis²⁶ such as Gomutra (cow urine) as it is known for good anti-obesity but this

drug has omitted from the list of Bhavaprakashokta anti-obesity²⁷.

The word Stoulya nashaka (anti-obesity) has been used only once in Bhavaprakash nighantu that to on Trikatu (combination of *P. nigrum*, *P. longum* and *Zingiber officinale*) suggested that this combination might be best anti-obesity drug according to this text.

There are mineral origin drugs which act as anti-obesity (Table 1) since properties of these drugs itself suggested the possible action over the fat tissue.

CONCLUSION

The present review on anti-obesity drugs of Bhavaprakash nighantu is first of its kind and suggested extended utility of drugs from Bruhatrayis to manage the disease. 54 drugs were used which were of herbal, animal and mineral origin. Trikatu (mixture of *P. nigrum*, *P. longum* and *Zingiber officinale*) was the only combination suggested as best anti-obesity. This review of literature may be further evaluated for clinical utility and planning of the treatment of obesity disorder.

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