A Critical Analysis of Medohara, Lekhana, and Karshana Plants from Nighantus: A Way Forward to Combat Obesity

Vishal Kumar1, Yashika Bidhuri2, Tanuja Nesari3, Rahul Sherkhane4, Shivani Ghildiyal5

ABSTRACT

Aim: To compile and critically analyze the Medohara, Lekhana and Karshana drugs mentioned in Nighantus with special reference to the management of obesity with promising results.

Background: Due to sedentary lifestyle and unwholesome food habits there is an ascending graph of obesity in India and worldwide. Although contemporary science has made efforts to cope up with this alarming rise but the results are not promising. Thus, the world is looking towards ancient healing science of Ayurveda to combat the situation. Ayurvedic classics and Nighantus are the wealth of herbal drugs and dosage forms. The drugs ascribed under the heading of Medohara, Lekhana and Karshana Dravyas in Ayurveda may have anti-obesity activity. The rational use of these time tested herbs may be the answer for the management of obesity. Earlier number of studies were carried out on anti-obesity drugs described in Brihat trapi. However, the data of anti-obesity drugs described in Nighantus is not available till date. Thus, the review was conducted by reviewing the popular available Nighantus i.e. Dhanvantari Nighantu (10th–13th Centuries), Sodhala Nighantu (12th century), Madanapala Nighantu (14th century), Kajiyadeva Nighantu (15th century), Bhavaprakaska Nighantu (16th century), Raj Nighantu (17th century) and Priya Nighantu (20th century).

Review results: A total of 72 drugs were found having Medohara, Lekhana and Karshanya effect in the Nighantus database.

Conclusion: Pharmacodynamic attributes i.e. Rasa, Guna and Veerya have individual effect in obesity. Katu Vipaka is having more significant influence in producing Medohara, Lekhana and Karshana karma which is important for management of obesity.

Clinical significance: These drugs can be validated for their anti-obesity or anti-hypolipidemic activities on the basis of preclinical and clinical studies. It will also help in selection of drugs for the management of obesity.

Keywords: Ayurveda, Karshana, Lekhana, Medohara, Nighantu.

Journal of Drug Research in Ayurvedic Sciences (2019): 10.5005/jdras-10059-0062

INTRODUCTION

Lifestyle disorders (LSDs) are a group of diseases in which diet and lifestyle play crucial roles in the etiology of the diseases. The most common LSDs are hypertension, obesity, diabetes, and cardiovascular diseases.1 Diseases associated with tobacco smoking, drug abuse, and alcohol are also included under LSDs.2 Obesity is one of such LSDs. According to the World Health Organization (WHO) data, obesity has tripled since 1975. In 2016, the overweight population were more than 1.9 billion adults who are 18 years and older. Of these, over 650 million were obese. About 41 million children under the age of 5 were overweight or obese. Overweight and obesity is defined as abnormal or excessive fat accumulation that may be harmful for the health of human. To explain obesity and overweight, the body mass index is useful as it is a simple index of weight for height.3 Growing prevalence of obesity worldwide is an increasing concern surrounding the rising rates of diabetes, coronary, and cerebrovascular diseases, with the consequent health and financial implications for the population.4 The adipose tissue can affect liver, skeleton muscles, heart, insulin resistance, dyslipidemia and nonalcoholic fatty liver disease.5 The obese and diabetic individuals are at greater risk of developing and dying from multiple cancers.6

In Ayurveda, according to Acharya Sushruta, Sthautya (obesity) and Karshya (cachexia) both are dependent on Aahara rasa.7 The state of Atisthautya is considered as Medo Dhatu Vikara.8 Acharya Charaka described eight unwelcome conditions, among them Atisthautya (obesity) is one.9 Accumulation of excessive Meda (fat/adipose tissue) and Mamsa (flesh/muscle tissue) on hips, abdomen, and breast has been categorized as Atisthautya.10 Medas is the body tissue predominant in Prithvi (Earth) and Aap (Water) Mahabhutas similar to Kapha Dosha.11 Disproportionately increased Medas leads to obesity and is the culprit for several serious ill effects such as Ayuhrasa (decrease in life span), Jvoparodha (decrease in enthusiasm and activity), Krichrayavayata (difficulty in sex), Dourbalya (weakness), Dourgandhya (bad odor of body), Swedabahda (excess perspiration), and Kshut Pipasadhiyakha (excessive hunger and thirst).12 The review of literature reveals around 100 drugs enumerated in Brihat trapi have Medohara and Lekhana properties.13 But the wealth of Nighantus is still unexplored.
Thus, an attempt is made to be acquainted with drugs having Medohara, Lekhana, and Karshana properties mentioned in the important Nighantus of Ayurveda.

**Materials and Methods**

The study was conducted by reviewing the popularly available Nighantus, i.e., Dhanvantari Nighantu (10th to 13th centuries),\(^1\) Sodhala Nighantu (12th century),\(^2\) Madanapala Nighantu (14th century),\(^3\) Kaiyadeva Nighantu (15th century),\(^4\) Bhavaprakash Nighantu (16th century),\(^5\) Raj Nighantu (17th century),\(^6\) and Priya Nighantu (20th century).\(^7\) The drugs were segregated as Medohara, Lekhana, and Karshana groups. The Rasa, Veerya, Vipaka, family, botanical name, and part of all such plants used were compiled.\(^8\) The information was critically analysed and the results were presented in the form of tables, graphs, and percentiles. Contemporary review of the drugs that are mentioned for their antiobesity and hypolipidemic activity was reported.

**Observations and Results**

A total of 72 drugs were found having Medohara, Lekhana, and Karshaniya effect in the Nighantu database which was reviewed (Tables 1 to 3, respectively).

It is reported that Karpura, Yava, Guggul, Madanphala, and Kshiri Vriksha have both Medohara and Lekhana effects and the plant

**Table 1: List of Medohara drugs in Nighants**

| S. no. | Drug name                      | Family               | Part used | Rasa   | Vipaka   | Veerya | Reference (Varga/shloka) |
|-------|--------------------------------|----------------------|-----------|--------|----------|--------|-------------------------|
| 1     | Aragvadha (Cassia fistula L.)   | Leguminosae          | Leaf      | Tikta  | Madhura  | Sheeta | Ka.Ni.1/942-947          |
| 2     | Amalaki (Phyllanthus emblica L.) | Phyllanthaceae       | Fruit     | Tikta  | Amla, Kashaya, Madhura, Katu, Tikta | Ka.Ni.1/235-240 |
| 3     | Apamarga (Achyranthes aspera L.) | Amanthaceae          | Root, seed| Katu, Tikta | Katu, Tikta | Ushna | Ka.Ni.1/1032-1034, Bh.Ni.3/219-220 |
| 4     | Arjuna (Terminalia arjuna (Roxb. ex DC.) Wight and Arn.) | Combretaceae | Bark | Kashaya | Katu | Sheeta | Ka.Ni.1/819-820, Bh.Ni.5/26-27, Pr.Ni.1/125-126 |
| 5     | Bhurja (Betula utilis D.Don.)  | Betulaceae           | Bark      | Kashaya | Katu | Ushna | Ka.Ni.1/817-818, Bh.Ni.5/47-48 |
| 6     | Beejaka (Pterocarpus marsupium Roxb.) | Leguminosae         | Heart wood| Kashaya | Tikta, Katu | Ushna | Ka.Ni.1/811-814 |
| 7     | Chakramarda [Senna toora (L.) Roxb.] | Leguminosae         | Leaves | Katu | Katu | Sheeta | Raj.Ni.2/198-200 |
| 8     | Chanaka (Cicer arietinum L.)   | Leguminosae          | Seeds     | Kashaya | Katu | Sheet | So.Ni.2/939-940 |
| 9     | Duralabha/Yavasa (Alhagi pseudalhagi (M. Bieb.) Desv. Ex B. K and S) | Leguminosae | Exudate | Madhura, Tikta, Kashaya | Madhura, Tikta, Kashaya | Sheet | Ka.Ni.1/983-986, Bh.Ni.3/211-214 |
| 10    | Granjana (Daucus carota L.)    | Apiaceae             | Modified root | Madhura, Tikta | Madhura, Tikta | Ushna | Ka.Ni.1/674-675 |
| 11    | Granthi parna (Angelica glauca Edgew.) | Apiaceae | Root | Madhura, Katu, Tikta | Madhura, Katu, Tikta | Sheet | Bh.P.Ni.2/112-113 |
| 12    | Guduchi (Tinospora sinensis (Lour.) Merr.) | Menispermaceae | Stem | Tikta | Madhura | Ushna | Dh.Ni.1/1-9 |
| 13    | Guggul (Commiphora mukul (Hook. Ex Stocks) Engl.) | Burseraceae | Exudate | Tikta, Kashaya | Katu | Ushna | Ma.Ni.1/46-49, Bh.Ni.1/1405-1408, Bh.Ni.2/32-44 |
| 14    | Kantakari dvaya (Solanium indicum L.) (Solananur surattense Burm. f.) | Solanaceae | Whole plant | Katu, Tikta | Katu | Ushna | Bh.P.Ni.3/36-43 |
| 15    | Nadiant (Vitex negundo L.)    | Lamiaceae            | Patra     | Katu, Tikta, Kashaya | Katu | Ushna | Ka.Ni.1/1093-1094 |
| 16    | Karpura (Cinnamomum camphora (L.) J.Presl) | Lauraceae | Exudate | Tikta, Katu, Madhura | Katu | Sheet | Ma.Ni.3/1-3, Ka.Ni.1/1277-1279, Bh.Ni.2/14-1, Dh. N.3/29-30 |
| 17    | Katambhar (Shyonak) (Oroxylum indicum (L.) Kurz) | Bignoniaceae | Root, bark | Katu | Katu | Ushna | Ka.Ni.1/39-43 |
| 18    | Katu Karanja (Pongamia pinnata (L.) Pierre) | Leguminosae | Seed | Katu, Tikta, Kashaya | Katu | Ushna | Ka.Ni.1/964-968 |
| 19    | Katu Shalmali (Ceiba pentandra (L.) Gaertn.) | Malvaceae | Seed | Tikta | Katu | Ushna | Bh.P.Ni.5/58-59 |
| 20    | Khadira (Acacia catechu (L.f.) Willd.) | Leguminosae | Heartwood | Tikta, Kashaya | Katu | Sheet | Bh.P.Ni.5/32-30-32, Ka.Ni.1/821-824, Pr.Ni.11/129-131 |

Contd…
### A Critical Analysis of Medohara, Lekhana, and Karshana Plants from Nighantus: A Way Forward to Combat Obesity

| S. no. | Drug name | Family | Part used | Rasa | Vipaka | Veerya | Reference (Varga/shloka) |
|--------|-----------|--------|-----------|------|--------|--------|-------------------------|
| 21     | Kshiri Vriksha (Vata-Ficus benghalensis L., Udumbara- Ficus racemosa L., Ashvattha-Ficus religiosa L., Parisha- Thepesia populea (L.) Sol. Ex Correa, Plaksha- Ficus lacor Buch.-Ham.) | Vata-Moraceae, Udumbara-Moraceae, Ashvattha-Moraceae, Parisha-Malvaceae, Plaksha-Moraceae | Bark | Kashaya | Katu | Sheeta | Bh.P.NI.5/15-18 |
| 22     | Kulattha (Vigna unguiculata (L.) Walp.) | Leguminosae | Seed | Kashaya | Katu | Ushna | Dh.NI. 6/93-95, Bh.P.NI.8/60-62, Pr.NI.2/62 |
| 23     | Madanaphala (Catunaregam spinosa (Thumb.) Tirveng.) | Rubiaceae | Fruit | Kashaya, Madhura, Tikta, Katu | Katu | Ushna | Ma.NI.1/149-150 |
| 24     | Mascar (Lens culinaris Medik.) | Leguminosae | Seeds | Madhura | Madhura | Sheeta | So.NI.22/-935 |
| 25     | Mokshaka (Screbrena swietenioides Roxb.) | Oleaceae | Root | Katu | Katu | Ushna | Bh.P.NI.3/19-22, Ka.NI.1/873-877 |
| 26     | Mundi/Shravani (Sphaeranthus indicus L.) | Compositae | Whole plant | Madhura | Katu | Ushna | Bh.P.NI.3/215-218 |
| 27     | Murva (Marsdenia tenacissima (Roxb.) Moon) | Apocynaceae | Root | Tikta, Kashaya | Katu | Ushna | Ka.NI.1/785-787 |
| 28     | Kapiththa (Limonia acidissima (Groff) | Rutaceae | Patra | Katu, Kashaya, Tikta | Katu | Ushna | Ka.NI.1/413-416 |
| 29     | Nirgundi (Vitex negundo L.) | Lamiaceae | Leaves | Tikta, Kashaya, Katu | Katu | Ushna | Ka.NI.1/124-130 |
| 30     | Paribhadra (Erythrina variegata L.) | Leguminosae | Bark | Katu, Tikta | Katu | Ushna | Ka.NI.1/898-899, Bh.P.NI.3/100, Pr.NI.1/188-189 |
| 31     | Pippali (Piper longum L.) | Piperaceae | Root, fruit | Katu | Madhura | Katu | Ushna | Bh.P.NI.1/53-58 |
| 32     | Plaksha (Ficus lacor Buch.-Ham.) | Moraceae | Bark | Kashaya | Katu | Sheeta | Ka.NI.1/435-437 |
| 33     | Raj Arka (Calotropis gigantea (L.) Dryand. | Apocynaceae | Exudate | Madhura (Flower, Tikta-Lavana) | Katu | Ushna | Dh.NI.4/14-15 |
| 34     | Rohitaka (Teconomella undulata (Sm.) Seem) | Bignoniaceae | Bark | Katu, Tikta | Katu | Ushna | Ka.NI.1/914-916 |
| 35     | Snuhi/Sehund (Euphorbia neriifolia L.) | Euphorbiaceae | Exudate | Katu | Katu | Ushna | Ka.NI.1/917-921, Bh.P.NI.3/73-77 |
| 36     | Shirigu (Moringa oleifera Lam.) | Moringaceae | Root, bark | Katu | Tikta, Kashaya | Katu | Ushna | Ka.NI.1/973-975 |
| 37     | Shirisha (Albizia lebbeck (L.) Benth.) | Leguminosae | Bark | Tikta, Kashaya | Katu | Ushna | Ka.NI.1/977-979, Bh.P.NI.5/24-25, Pr.NI.1/122-124 |
| 38     | Shimshapa (Dalbergia sissoo DC.) | Leguminosae | Bark, root | Kashaya | Katu | Ushna | Ka.NI.1/1588-1592 |
| 39     | Surana (Amorphophallus paeoniifolius (Dennst.) Nicolson) | Araceae | Tuber | Kashaya, Katu | Katu | Ushna | Ka.NI.1/815-816 |
| 40     | Tinisha (Desmodium oojensense (Roxb.) H.Ohashi) | Leguminosae | Exudate | Kashaya | Katu | Sheeta | Ka.NI.1/815-816 |
| 41     | Tuvari (Erucu vesicaria (L.) Cav.) | Brassicaceae | Fruit | Kashaya | Katu | Sheeta | So.NI.22/-938 |
| 42     | Vartak (Solanan melongena L.) | Solanaceae | Fruit | Madhura | Katu | Sheeta | Bh.P.NI.9/70-82 |
| 43     | Varuna (Crateva nurvala Buch.-Ham.) | Capparaceae | Bark | Madhura, Tikta | Katu | Sheeta | Pr.Ni.1/162-164 |
| 44     | Bashpika (Gardenia gymnophila L.) | Rubiaceae | | Katu, Tikta | Katu | Ushna | Ka.NI.1/1212-1214 |
| 45     | Vidanga (Embelia ribes Burm. f.) | Primulaceae | Fruit | Katu | Katu | Ushna | Ka.NI.1/1147-1149 |
| 46     | Vishamushi (Strychnos nux-vomica L.) | Loganiaceae | Seed | Katu, Tikta | Katu | Ushna | Ka.NI.1/600-602 |
| 47     | Yava (Hordeum vulgare L.) | Poaceae | Fruit | Kashaya, Madhura | Katu | Sheeta | Dh.NI. 6/67-68, Bh.P.NI.8/28-30 |
### Table 2: List of Lekhaniya drugs in Nighantus

| S. no. | Drug name                                      | Family                  | Part used | Rasa   | Vipaka | Veerya | Reference                          |
|-------|-----------------------------------------------|-------------------------|-----------|--------|--------|--------|------------------------------------|
| 1     | Aama Kapittha (Limonia acidissima Groff)      | Rutaceae                | Fruit     | Kashaya| Katu   | Ushna  | Ka.Ni.1/419, Bh.P.Ni.6/61          |
| 2     | Aama, Tinduka, Pakva Tinduka (Diospyros malabarica (Desr.) Kostel.) | Ebenaceae              | Fruit     | Aama - Kashaya, Pakva, Madhura | Katu | Ushna | So.Ni.5/478-479, Ka.Ni.1/74 |
| 3     | Arishtaka (Sapindus trifoliatus L.)           | Sapindaceae             | Fruit     | Tikta, Katu   | Katu | Ushna  | Ka.Ni.1/981-982                   |
| 4     | Ashmantaka (Ficus rumphii Blume)               | Moraceae                | Bark, exudate, fruit | Kashaya | Katu   | Sheeta | Ka.Ni.1/930-932                  |
| 5     | Ashvakarna (Dipterocarpus alatus Roxb. ex G.Don) | Dipterocarpaceae       | Oil       | Katu, Tikta | Katu | Sheeta | Ka.Ni.1/844-846                  |
| 6     | Bakula (Mimusops elengi L.)                    | Sapindaceae             | Fruit     | Kashaya, Katu | Katu | Sheeta | So.Ni.5/532-534                  |
| 7     | Bhavya (Dillenia indica L.)                    | Dilleniaceae            | Fruit     | Katu   | Sheeta | Ka.Ni.1/930-932                  |
| 8     | Bimbi [Coccinia grandis (L.)Voigt]             | Cucurbitaceae           | Fruit     | Tikta, Katu | Sheeta | Ka.Ni.1/930-932                  |
| 9     | Guggul {Commiphora mukul (Hook. Ex Stocks) Engl.} | Burseraceae           | Exudate   | Tikta, Katu | Katu | Ushna  | Ma.Ni.3/46-49, (Purana Guggulu 3/49) |
| 10    | Haritaki (Terminalia chebula Retz.)            | Combretaceae            | Fruit     | Kashaya, Tikta, Katu, Madhura, Amal | Madhura | Ushna  | Dh.Ni.1/205-211                   |
| 11    | Jambu (Syzygium cumini (L.) Skeels)             | Myrtaceae               | Fruit     | Kashaya, Madhura, Amla | Katu | Sheeta | Ka.Ni.1/345-351                  |
| 12    | Kanchanara (Bauhinia variegata L.)             | Leguminosae             | Bark      | Kashaya | Katu | Sheeta | Ma.Ni.1/158-161                  |
| 13    | Karpura (Cinnamomum camphora (L.) J.Presl)     | Lauraceae               | Exudate   | Tikta, Katu, Madhura | Sheeta | Ka.Ni.1/345-351                  |
| 14    | Kodrava (Paspalum scrobiculatum L.)            | Poaceae                 | Whole plant | Kashaya, Madhura | Katu | Sheeta | So.Ni.3/338-339, Ma.Ni.3/1-3, Ka.Ni.1/1277-1279, B.P.Ni.2/1-4, Pr.Ni.1/66 |
| 15    | Kshiri Vriksha (Vata-Ficus benghalensis L, Udumbara-Ficus racemosa L, Asvattha-Ficus religiosa L, Parisha- Thesperia populnea (L.) Sol. Ex Correa, Plaksha-Ficus lacaor Buch.-Ham.) | Vata-Moraceae, Udumbara-Moraceae, Asvattha-Moraceae, Parisha-Moraceae, Plaksha-Moraceae | Bark | Kashaya | Katu | Sheeta | So.Ni.5/497-500, B.P.Ni.5/15-18 |
| 16    | Madana (Catunaregam spinosa (Thunb.)Tirveng.)  | Rubiaceae               | Fruit     | Madhura, Tikta, Katu | Katu | Ushna  | Ma.Ni.1/149-150, Ka.Ni.1/900-902, Bh.P.Ni.1/160-161 |
| 17    | Nagabala (Grewia hirsuta Vahl)                 | Malvaceae               | Root      | Madhura, Kashaya | Katu | Sheeta | Ma.Ni.1/185                      |
| 18    | Nivara (Hygropyza aristata (Retz.) Nees ex Weight and Arn.) | Poaceae                 | Whole plant (grass) | Kashaya | Katu | Sheeta | So.Ni.21/923                    |
| 19    | Shyamaka (Echinocloa frumentacea Link)         | Poaceae                 | Whole plant | Kashaya, Madhura | Katu | Sheeta | So.Ni.21/925-927                 |
| 20    | Trina Dhanya/ Kshudra Dhanya                   | Poaceae                 | Whole plant | Kashaya, Madhura | Katu | Sheeta/ Anusha | Ma.Ni.10/59-67, B.P.Ni.8/74-75 |
| 21    | Uddalaka (Paspalum scrobiculatum L.)           | Poaceae                 | Fruit     | Kashaya | Katu | Ushna  | So.Ni.21/922                    |
| 22    | Vacha (Acorus calamus L.)                      | Acoraceae               | Rhizome   | Katu, Tikta | Katu | Ushna  | Pr.Ni.3/45-47                   |
| 23    | Yava (Hordeum vulgare (L.))                    | Poaceae                 | Fruit     | Kashaya, Madhura | Katu | Sheeta | So.Ni.19/911-914, Ma.Ni.10/24-26, Ka.Ni.3/36-39, B.P.Ni.8/28-30, Pr.Ni.10/8-9 |
Medohara, Lekhana, and Karshana plants from Nighantus: A way forward to combat obesity

Discussion

Obesity is a lifestyle epidemic, which requires a more holistic management. The drugs mentioned under the umbrella of Medohara, Lekhanya, and Karshaniya effect may have beneficial antiobesity outcome. Looking at the Ayurveda aspect, the whole process of the mechanism of antiobesity drugs can be explained in three ways, namely, Medohara Karma which means reducing the Medadhatu, Lekhana karma meaning expelling the dhatus and malas of the body after drying up their moisture, e.g., honey, hot water, etc., also mentioned as "pattalikaranam" and Karshan karma meaning the ones having thinning action or Tanukarne. The results of all three effects are the same, but their pharmacodynamics are different. In Ayurveda, the pharmacodynamics of Dravyas is explained on the basis of Rasa, Guna, Veerya, Vipaka, Prabhava, etc. The specific pathway of action of drugs may be understood by further preclinical and clinical research. In the present review, it is observed that a total of 72 drugs were found in the referred Nighantus having Medohara, Lekhana, and Karshaniya effect. Out of the 72 drugs, 47 drugs Medohara effect; and of these drugs, 16 drugs having Katu Rasa, 14 Kashaya Rasa, 8 drugs Tikta Rasa, 7 Madhura Rasa, and 1 drug Amla Rasa, also Rasa of one drug was not mentioned in classics. Thus, we can interpret that the drugs with Katu and Kashaya Rasa are more likely to have Medohara effect. It may be because these Rasas have Vayu Mahabhuta and Ruksha-Laghu Guna, which are just opposite to the gunas of Meda Dhatu, i.e., Snigdha (unctuous), Guru (heavy), Sthula (space occupying), Picchila (slimy), Mridu (tender/soft), and Sandra (dense).

Of the 72 drugs, 23 drugs had specific Lekhanya effect, that is, the one that expels the malas after drying them up.
Of the 23 drugs, 13 were having Kashaya Rasa, 4 drugs had Tikta Rasa, and 3 drugs had Katu Rasa. All were having dominant Vayu mahabhuta; therefore, it can be said that Vayu mahabhuta might be causing the Shoshana Karma, i.e., the drying up of the Dhatus and Malas. Four drugs also having Madhura Rasa. Of the 72 drugs, 2 drugs possess Karshaniya effect, of which 1 having Tikta Rasa and the other having Katu Rasa, having Vayu Mahabhuta and Laghu-Ruksha Guna. Figure 4 shows the comparison of Shadarasa of Medohara, Lekhana, and Karshaniya Dravyas.

Looking at the Vipaka aspect, it was observed that 64 drugs that are mentioned under Medohara, Lekhana, and Karshana groups were having Katu Vipaka. Of these, 41 having Medohara effect, 21 had Lekhana effect, and 2 had Karshana effect. Thus, it can be said that Katu Vipaka of the drug may enhance the metabolism and result in Medohara, Lekhana, and Karshana effects. Figure 5 shows comparison of Vipaka of Medohara, Lekhana, and Karshaniya Dravyas.

Talking of the Veerya aspect of the drugs, it was found that Ushna Veerya drugs were more than Sheeta Veerya drugs. Figure 6 shows the comparison of Veerya of Medohara, Lekhana, and Karshaniya Dravyas.

The contemporary review reveals that work was done on many plants and their hypolipidemic activity was proven. In recent years, that is, after 2013, plants that are proven to have hypolipidemic action are Coptis chinensis Franch., catechin-enriched green tea and oolong tea, Marrubium...
A Critical Analysis of Medohara, Lekhana, and Karshana Plants from Nighantus: A Way Forward to Combat Obesity

vulgare L., Ficus dalhousiae Miq., Curcuma longa L. (haridra), Nelumbo nucifera Gaertn. (kamala), Hibiscus sabdariffa L., Rosae laevigateae (Chinese herb), Pleurotus ostreatus (oyster mushroom), Phellinus rimosus, Fagopyrum esculentum Moench., Lycium barbarum L. (goji berry), white bean seeds and pomegranate peel and fruit seeds, Hawthorn—Crataegus, Oicium gratissimum L. (tulsi), Vernonia amygdalina, Bixa orellana L. (sinduri), Melissa officinalis L., Berberis vulgaris L., Curculigo latifolia Dryand. ex.W.T. Alton, Pyrus communis L. (nashpati), Capparis spinosa L. Fruit. The list of these drugs does not include many potential herbs that are well mentioned in Ayurveda, and the wealth of Ayurvedic Nighantus lies still unexplored for clinical and preclinical studies of numerous drugs having hypolipidemic action.

**Conclusion**

The drugs mentioned in Ayurvedic classics and Nighantus for Medohara, Lekhana, and Karshana effect may work by different pharmacodynamic aspects. The earlier studies showed the drugs with Kashaya, Katu, Tikta Rasa, Ushna Veerya, and Rukasha, Laghu Gunas should be considered for antiobesity effect.13 The critical analysis of the present study showed that whatever be the pharmacodynamic attributes, i.e., Rasa, Gun, and Veeryas, they will definitely have individual effect per the Ayurvedic principle of similarity and dissimilarity. Therefore, it may be interpreted that Katu Vipaka is having more significant role in producing Medohara, Lekhana, and Karshana karma which are important for management of obesity.

**Acknowledgment**

Authors are thankful to Dr Galib, Associate Professor, Department of Rasa Shastra, All India Institute of Ayurveda, for his valuable suggestions to make the manuscript more scientific.

**References**

1. https://www.nhp.gov.in/lifestyle_disorder_mtlas on 05.05.2019.
2. https://www.medicinenet.com/script/main/art.asp?articlekey= 38316as on 05.05.2019.
3. http://www.who.int/news-room/fact-sheets-detail/obesity-and-overweightas on 05.05.2019.
4. Gallagher EJ, Karnieli E, LeRoith D. The metabolic syndrome: from obesity and diabetes to obesity and diabetes. Endocrin Metab Clin North Am 2008;37(3):559–579. DOI: 10.1016/j.ecl.2008.05.002.
5. Jung UJ, Choi M-S. Obesity and its metabolic complications: the role of adipokines and the relationship between obesity, inflammation, insulin resistance, dyslipidemia and non-alcoholic fatty liver disease. Int J Mol Sci 2014;15(4):6184–6223. DOI: 10.3390/ijms15046184.
6. Gallagher EJ, LeRoith D. Obesity and diabetes; the increased risk of cancer and cancer – related mortality. Physiol Rev 2015;95(3):727–748. DOI: 10.1152/physrev.00030.2014.
7. Susruta. In Susruta Samhita, Sutra-Sthana Doshadhatumalakshayavridhi Vigyaniya Adhyaya, 15/37 Dutta Shastri KA Varanasi: Chaukamba Sanskrit Sansthanha; 2015. p. 81.
8. Susruta. In Susruta Samhita, Sutra Sthana Vaidhri Samudeshiya Adhyaya, 24/13 Dutta Shastri KA Varanasi: Chaukamba Sanskrit Sansthanha; 2015. p. 132.
9. Agnivesa. In Caraka, Dridhabala, Charaka Samhita, Sutra Sthana Ashtaunindatiya Adhyaya 21/3 Dutta Shastri PR Varanasi: Chaukamba Bhartiya Academy; 2015. p. 407.
10. Agnivesa. In Caraka, Dridhabala, Charaka Samhita, Sutra Sthana Ashtaunindatiya Adhyaya 21/9 Dutta Shastri PR Varanasi: Chaukamba Bhartiya Academy; 2015. p. 411.
11. Sharma AK, Roga Vigyan evam Vikriti Vigyan. Varanasi: Chaukamba Vishwabharti; 2015. p. 24.
12. Agnivesa. In Caraka, Dridhabala, Charaka Samhita, Sutra Sthana Ashtaunindatiya Adhyaya 21/4 Dutta Shastri PR Varanasi: Chaukamba Bhartiya Academy; 2015. p. 409.
13. Kumari H, Pushpan R, Nisteswar K. Medohara and lekhaniya dravyas (Anti-obesity and hypolipidemic drugs) in Ayurvedic classics: a critical review. Ayu 2013;34(1):11–16.
14. Bhaugika Am. Dhanvantari Nighantu, Guduchyadivarga, Chandanadi varga, Karviradi varga, Suvarnadi varga Jharkhando O Varanasi: Chaukamba Surbharati Prakashan; 2016.
15. Sodhala A. Sodhala Nighantu, Shimbidhanyavarga, Chandani varga, Aamradi varga, Sukhannya varga, Trindhanya varga, Commentor Prof. Gyanendra pandey Dwivedi RR Varanasi: Chaukamba Krshnadas Academy; 2009.
16. Madanpala N. Madanpala Nighantu, Karpuradi varga, Vatadi varga, Shalayadityaninavarga, Abhyadi varga, Shaka varga, Trindhanya varga, Commentor Prof. Gyanendra pandey Varanasi: Chaukamba Oriintalia; 2012.
17. Pandit VK. Kaiyadeva Nighantu, Aushadi varga, Dhanyavarga Sharma P Varanasi: Chaukamba Oriintalia; 2013.
18. Bhavamishra A. Bhavaprakasha Nighantu. Karpuradi varga, Guducchiyadivarga, Chandani varga, Bhanyavarga, Shaka varga, Aamradi varga, Sukhannya varga, Trindhanya varga, Commentor Prof. KC Chunekar Pandey GS Varanasi: Chaukambhabha Bharati Academy 2015.
19. Sharma. PN. Raj Nighantu. Satavahadi varga, Karviradi varga Tripathi Varanasi: Chaukamba Krshnadas Academy; 2010.
20. Sharma PV. Priya Nighantu. Haritakya varga, Pipilayadi varga, Dhanyavarga, Dravyadi varga, Varanasi: Chaukamba Subhharati Prakashan; 2015.
21. Sharma. PV. Dravyaguna Vijyan, vol. 2, Varanasi: Chaukambhabha Bharati Academy; 2015.
22. Sharangdhara A, Sharangdhara Samhita,’Gudarth Dipika’Aadhhamalla and Kasiramnas, commentator Pratamaha-Khanda, Deepanpachana Adhyaya 4/10 Vidyasagar PS Varanasi: Chaukambha Surbharati Prakashan; 2013. p. 37.
23. Amarasimha. Amaraksho, With Commentary Ramasrambi Sastri H Varanasi: Chaukambhabha Sanskrit Sansthanha; 2016. p. 66.
24. Agnivesa. In Caraka, Dridhabala, Charaka Samhita, Sutra Sthana, Attreya Bhadrakapiya Adhyaya 26/13 Dutta Shastri PR Varanasi: Chaukamba Bhartiya Academy; 2015. p. 492.
25. Agnivesa. In Caraka, Dridhabala, Charaka Samhita, Sutra Sthana Attreya Bhadrakapiya Adhyaya 26/40 Dutta Shastri PR Varanasi: Chaukamba Bhartiya Academy; 2015. p. 502.
26. Agnivesa. In Caraka, Dridhabala, Charaka Samhita, Sutra Sthana Dirghanjanjivita Adhyaya 1/59 Dutta Shastri PR Varanasi: Chaukamba Bhartiya Academy; 2015. p. 36.
हिंदी सारांश

स्थूल्य के निवारण हेतु निघंठ से मेदोहर, लेखन और कर्षण हब्ज़ से का आलोचनात्मक मूल्यांकन

उद्देश्य: आशाजनक परिणामों के साथ स्थूल्य के उपचार के विशेष संदर्भ में निघंठ में वर्णित मेदोहर, लेखन और कर्षण औषधियों का संकलन और उनका आलोचनात्मक मूल्यांकन करना।

पृष्ठभूमि: भारत और संस्कृत विश्व में गतिशील जीवनशैली और अस्वस्थ्यकर आहार संबंधी आदतों के कारण स्थूल्य का ग्राहक बढ़ता ही जा रहा है। हालांकि, समकालीन विविधता विज्ञान से इस समस्या का समाधान नहीं है। अतः, इस समस्या से निपटने के लिए विश्व आयुर्वेद के प्राचीन विविधता विज्ञान की ओर देख रहा है। आयुर्वेदिक शास्त्रीय ग्रंथ और निघंठ में औषधियों और इतिहास के विविध रूपों का वर्णन है। आयुर्वेद में मेदोहर, लेखन और कर्षण द्रव्यों के अंतर्गत ही गई औषधियाँ स्थूल्य-रोगी गतिशील रोगों को दूर कर सकती हैं। यह स्थूल्य के उपचार के लिए समाधान जंग की गई औषधि का पुर्वसूचना उपयोग किया जा सकता है।

समीक्षा परिणाम: निघंठ डाटबेस में मेदोहर, लेखन और कर्षण प्रभाव वाली कुल 72 औषधियों पायी गयी।

निष्कर्ष: स्थूल्य के ज्ञानी को फार्मूलोजिस्टिक तत्त्व यथा रस, गुण और वीर्य अलग-अलग प्रभाव डालते हैं। मेदोहर, लेखन और कर्षण नमक का मूल्यांकन नवीनिता में कटृं० विभाग महत्वपूर्ण प्रभाव ढालता है। यह स्थूल्य के उपचार के लिए आवश्यक है।

प्रायदलिक आभास: पुरातन औषधि और नवावजनक अध्ययनों के आधार पर इन औषधियों का स्थूल्य-रोगी या हापौलीस्पेसिफिक-रोगी गतिशीलिकाएँ हेतु विभिन्न युगलकरण ही सकती है। यह स्थूल्य के उपचार में औषधियों का चयन करने में भी सहायक होगा।

मुख्यशब्द: आयुर्वेद, कर्षण लेखन, मेदोहर, निघंठ।