

# Role of Diet in *Abbadha Medas* vis-à-vis Dyslipidemia

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## ABSTRACT

Metabolic disorders are one of the major burning issues that the health system around the globe is counteracting through, dyslipidemia being one among them. Dyslipidemia is a condition where the metabolism of lipids are altered and can lead to increase levels of cholesterol in blood causing atherosclerosis and in turn being the major cause for CVD (Cardio Vascular Disease) and Stroke. Dyslipidemia is one among the 4 key metabolic risk factors which increase the risk of cardiovascular diseases (atherosclerotic vascular disease) a non-communicable disease; which account for 17.9 million deaths annually, worldwide. Diet is the prime line of treatment mentioned for these metabolic disorders without any side effects. In Ayurveda Dyslipidemia can be understood as *Abbadha Medas* where *Apatarpana Chikitsa* and *Kapha-Medohara Pathyas* are advised.

**Key Words** *Dyslipidemia, Metabolic Disorder, Diet intervention, Abbadha Medas, Ayurveda, Pathya*

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## INTRODUCTION

Metabolic disorder is a disorder that negatively alters the body's processing and distribution of macronutrients such as proteins, fats, and carbohydrates. Metabolic disorders can happen when abnormal chemical reactions in the body alter the normal metabolic process. Disorders of Lipoprotein metabolism is considered as one among the metabolic disorder<sup>1</sup>.

**Dyslipidemia:** Disorders of Lipoprotein metabolism are collectively called dyslipidemia, including lipoprotein overproduction or deficiency<sup>2</sup>. These disorders may be manifested

by elevation of the serum total cholesterol, low density lipoprotein (LDL) cholesterol and triglyceride concentrations and a decrease in the high-density lipoprotein (HDL) cholesterol concentration<sup>3</sup>. Dyslipidemia is classified mainly as primary which is caused due to single or multiple gene mutation and secondary dyslipidemia which can result due to other disease such as Diabetes mellitus, chronic kidney disease, Alcohol overuse, Hypothyroidism, Primary biliary cirrhosis and other cholestatic liver diseases, Drugs, such as thiazides, beta-blockers, retinoids, highly active

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antiretroviral

agents, cyclosporine, tacrolimus, estrogen and progestins, and glucocorticoids<sup>4</sup>.

Dyslipidemia can be understood under the concept of *Abaddha Medas* in Ayurveda where the *Kapha Pichilla* and *Sneha Guna* gets increased due to the *Nidana Sevana* (*Shleshmala Ahara Vihara, Gramya Dosha* and *Santarpanotta Vikaras*) causing *Abaddhata of Medas* and its *Paribramana* in *Rasa* and *Rakta Dhatu*<sup>5</sup>.

**Principles of management:** Lipid lowering therapies have a key role in the secondary and primary prevention of cardiovascular diseases. Assessment of absolute risk of cardiovascular disease, treatment of all modifiable risk factors and optimisation of lifestyle, especially diet and exercise, are central to management in all cases of Dyslipidemia<sup>6</sup>. Thus Diet is the prime line of treatment mentioned for these metabolic disorders without any side effects.

### Long-term Dietary Modifications-

In order to reduce the risk for additional myocardial infarctions, patients are encouraged to follow the ACC/ AHA Lifestyle management Guidelines. Many patients will benefit from a very specific daily menu guide to get them started on a healthier eating plan. Research supports the adoption of a Mediterranean diet or the DASH diet for patients with cardiovascular disease who have had an MI.

Thus diet has an important role to play in Dyslipidemia<sup>7</sup>.

### Principles to be followed during fat intake –

- Take just enough fat.
- Moderate the use of animal foods containing high fat, SFA and cholesterol.
- Choose low- fat dairy foods in place of regular whole fat dairy foods.
- Eat foods rich in alpha-linolenic (ALA) acid such as legumes, green leafy vegetables, fenugreek and mustard seeds.
- Eat fish more frequently (at least 100-200g /week), prefer it to meat, poultry and limit/ avoid organ meats such as liver, kidney, brain etc.
- Minimize consumption of ready- to- eat fast foods, bakery foods and processed foods prepared in hydrogenated fat.
- Use of re-heated fats and oils should be avoided.
- Use fats and oils in moderation and consume varieties of foods to get good proportion of all fatty acids for optimal health benefits<sup>8</sup>.

### PATHYA AS PER AYURVEDA CLASSICS

#### General principles of diet to be followed in Dyslipidemia:

Dyslipidemia is considered as one of the “*Santarpanotta Vikara*” where *Kapha Dosha* and *Medo Dhatu* are mainly involved in the initial *Samprapti*. Thus *Pathya* which has *Kapha-Medo Shoshaka* or having the properties of “*Apatarpana*” to be administered<sup>9</sup>. Ayurveda emphasis on restricting **Alcohol and Non-Vegetarian diet**, minimize the *Ahara* which can increase the *Kapha Dosha*, follow the principles of *Ashta Vidha Visheshah Ahara Ayatanani*<sup>10</sup> and *Dwadasha Ashana Pravichara*<sup>11</sup> which is very

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much similar to the principles of diet mentioned for Dyslipidemia in contemporary science.

Ayurveda has offered the *Guna* of *Ahara Dravya* which is consumed daily, which as *Kapha-Medohara* and can be beneficial in Dyslipidemia the list of the same is provided below.

**Pathya-Apathya in Medo Roga:**

In the context of *Medo Roga*; Acharyas have explained *Purana Shali, Mudga, Kulattha, Uddalaka, Kodrava, Yava, Godhuma, Kshoudra, Shyamaka, Chavya, Chitraka, Jiraka, Trikatu, Hingu, Dadhi Mastu*<sup>12,13</sup> *Gavedukanna, Kulatha, Chanaka, Masura, Mudga, Laja, Takra, Sura, Chingata, Matsya, Vartaka Phala, Sarshapa Taila, Ela, Patrotta Shaka, Pratapta Jala* and *Sauvarcha Lavana* as *Aharaja Pathya*<sup>14</sup>.

*Purana Vamsa Bija, Shyamaka Dhanya, Nivara Dhanya, Koraduha, Yava, Kulatha, Chanaka, Masura, Mudga, Tuvara, Madhu, Laja, Takra, Katu-Tikta-Kashaya Dravya, Pingala Matsya, Sura, Vartaka, Triphala, Guggulu, Trikatu, Payasa, Shweta Sarshapa Taila, Ela, Yavakshara, Akshataila, Patra Shaka* and *Ushna*

*Jala* are considered as *Aharaja Pathya* in *Medo Roga*<sup>15</sup>.

*Purana Rakta Shali, Jangala Jantu Mamsa, Mudga, Kulatta Yusha, Raga, Kambali, Khandava, Patola, Kadali Phala, Purana Kushmanda, Amra, Dadima, Syamaka Shaka, Navina Masha, Eranda Taila, Akasha Jala, Saindhava Lavana, Ajatakra, Purana Guda, Shunti, Yavani, Lashuna, Haritaki, Dhanyaka, Pippali, Adraka, Kanji, Madhu, Madya, Tambula, Nagavalli* are considered a *Pathya* in *Hridroga*<sup>16</sup>.

*Shali-Godhuma, Ksheera, Ikshu Vikruti, Masha, Sauhitya Sneha, Mamsa, Matsya, Madhura Dravyas*<sup>17, 18</sup> *Aja Dugdha, Kashaya Dravya, Yasti Madhu*<sup>19</sup> are considered to be *Aharaja Apathya* in *Medo Roga*.

Thus based on these principles food articles can be selected from different *Vargas* mentioned in Ayurveda. Details of the same is provided in Table 1.

**Table 1** *Ahara Vargas* which can be considered to be *Pathya* in Dyslipidemia along with their *Guna/ Karma*<sup>20, 21, 22, 23, 24, 25</sup>

Sl. No	Varga	Pathya	Guna
1.	<i>Shuka Dhanya</i> (Cereals)	<i>Shashtika Shali</i> (Rice/ ಅಕ್ಕಿ)	<i>Laghu, Tridosha Shamaka</i>
		<i>Purana Godhuma</i> (Wheat/ ಗೋಧಿ)	<i>Jeevano, Guru</i>
		<i>Uddalaka, Shyamaka, Bajara</i>	<i>Laghu, Kapha-Pittagna, Shoshaka</i>
2.	<i>Shami Dhanya</i> (Pulses)	<i>Kangu/ Kodrava/ Nivara/ Shyamaka</i> (Types of millet/ ರಾಗಿ, ನವಣೆ, ಸಾಮೆ, ಅರ್ಕ, ಊದಲು, ಕೊರಲೆ, ಬರಗು, ಸಜ್ಜೆ, ಬಿಳಿ ಜೋಳ)	<i>Vatakara, Lekhanakara, Kapha-Pittahara</i>
		<i>Yava</i> (Barley/ ಬಾರ್ಲಿ)	<i>Ruksha, Aguru, Shleshmavikaranut, Medohara</i>
		<i>Adhaki</i> (Toor dal/ ತೊಗರಿ ಬೇಳೆ)	<i>Kapha-Pittagni, Vatala, Kapha-Vatanut.</i>

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	Mudga (Green gram/ ಹೆಸರು ಬೇಳೆ)	Kashaya, Ruksha, Katu Paka, Laghu, Vishada, Sleshma-Pittaghna.
	Chanaka (Bengal gram/ ಕಡಲೆ ಕಾಳು), Masura (Masoor Dal/ ಕೆಂಪು ಬೇಳೆ), Khandika and Harenu (Pea/ ಬಟಾಣಿ)	Laghu, Kashaya, Virukshanakara
	Kulattha (Horse gram/ ಹುರಳಿ ಕಾಳು)	Ushna, Kashaya, Kapha-Shukra-Anilahara
	Raja Masha (Cow Pea/ ಹಲಸಂದೆ ಕಾಳು)	Sara, Ruchya, Kapha- Shukra- Amla-Pittanut, Vatala, Ruksha, Kashaya, Vishada, Guru.
	Kalaya (Grass Pea/ ಕೇಸರಿ ಬೇಳೆ)	Laghu, Vatakara
	Nishpava (Flat beans/ ಅವರೆ/ ಚಪ್ಪರದ ಅವರೆ)	Kaphahara
	Shimbi Dhanyas (Pulses)	Ruksha, Kashaya, Vata Prakopaka
3.	Mamsa Varga (Non-Veg) Rohita Matsya (Red Variety of Fish/ ಮೀನು)	Agnivardhaka
4.	Shaka Varga (Vegetables) Methika (Fenugreek/ ಮೆಂತ್ಯೆ) Patola (Pointed Gourd/ ಪಡವಲ) Karvellaka (Bitter Gourd/ ಹಾಗಲ ಕಾಯಿ) Tanduleyaka (Cluster Beans/ ಚೌಳಿ ಕಾಯಿ) Dhanyaka (Coriander/ ಕೊತ್ತಂಬರಿ) Vastukam (Mountain Spinach/ ಚಕ್ಕೊತ್ತ ಸೊಪ್ಪು) Susha (Coffee Senna/ ಎಲ್ಲರಿ ಸೊಪ್ಪು) Sunishnaka (Water Clove/ ಹುಲಿ ಚಿಕ್ಕ) Shobhanjana (Drum Stick/ ನುಗ್ಗೆ ಸೊಪ್ಪು) Kakamachi (Night Shade/ ಕಾಕಿ ಸೊಪ್ಪು) Mundukaparni Shaka (Indian pennywort /ಬ್ರಾಹ್ಮಿ ಸೊಪ್ಪು) Surana (Golden Nugget/ ಸುವರ್ಣ ಗಡ್ಡೆ) Tambula Patra (Betel Leaves/ ವಿಳೆದೆಲೆ)	Vata-Kaphahara, Ushna Pitta-Kapha Nashini, Hrudya Deepana, Kapha-Pittajit Ruksha Tridosha Shamaka, Ushna Tridosha Shamaka Tridosha Shamaka Tridosha Shamaka KaphaVatahara, Pittakara, Laghu, Ruksha Tridosha Shamaka Tikta Rasa, Katu Vipaka, Kapha – Pitta Nashaka Kaphagna Agni Deepaka, Vayu-Kaphanashakabb
	Trapusha (Cucumis sativus/ ಸೌತೆ) Kakadi (Cucumis melo vari/ ಸಾಂಬಾರ್ ಸೌತೆ)	Guru, Ruksha, Mutrala
5.	Phala Varga (Fruits) Tanka Phala (Pear fruit/ ಪೇರು ಹಣ್ಣು) Jambu (Jamun/ ನೇರಳೆ) Shushka Badara (Jujube Fruit/ ಬೋರೆ ಹಣ್ಣು) Amalaki (Goose Berry/ ನೆಲ್ಲಿ)	Kashaya Rasa, Vata Vardhaka Kashaya- Madhura Rasa, Guru, Kapha-Pitta Nashaka, Vatavardhaka Kapha – Vata Nashaka Ruksha, Kapha Pitta Nashaka

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	<i>Dadima</i> (Pomegranate/ ದಾಳಿಂಬೆ)	<i>Agni Vardhaka, Vata Nashaka,</i>	
	<i>Talaphala</i> (Ice Apple/ ತಾಟಿನಿಂಗು)		
	<i>Bilva</i> (Wood Apple/ ಬೆಲದ ಹಣ್ಣು)	<i>Agni Vardhaka, Kapha-Vata Nashaka</i>	
	<i>Vibhitaki Phala</i> (Myrobalan / ತಾರೆ ಕಾಯಿ )	<i>Mamsa-Medo Vikara Nashaka, Kaphahara</i>	
	<i>Vruksamla</i> ( Tamrind/ ಹುಣಸೆ)	<i>Vata-Kaphahara, Ruksha, Ushna Veerya</i>	
	<i>Matulunga</i> (Citron/ ಮಾದಳೆ)	<i>Agnideepaka, Hrudya, Kapha Nashaka</i>	
	<i>Puga Phala</i> (Betel Nut/ ಅಡಕೆ )	<i>Kapha-Pitta Nashaka, Ruksha</i>	
	<i>Jati Kosha</i> (Nut Meg/ ಜಾಕಾಯಿ), <i>Jaavitri</i> (Mace powder/ ಜಾಪತ್ರೆ), <i>Lavanga</i> (Clove/ ಲವಂಗ)	<i>Kapha Nashaka</i>	
	<i>Naranga Phala</i> (Orange/ ಕಿತ್ತಲೆ)	<i>Hrudya, Vata Nashaka , Guru</i>	
6.	<i>Harita Varga</i> (Raw Vegetables)		
	<i>Ardraka</i> (Ginger/ ಶುಂಠಿ)	<i>Deepana</i>	
	<i>Jambira</i> (Lemon/ ನಿಂಬೆ)	<i>Teekshna, Vta-Kapha Nashaka, Deepana</i>	
	<i>Mulaka</i> (Raddish/ ಮುಲಂಗಿ)	<i>Bala Mulaka – Doshahara Shushka Mulaka – Kapha-Vata Shamaka</i>	
	<i>Yavani</i> (Ajwain/ ಅಜವೈನ), <i>Arjaka</i> (Clove Basil/ ತುಳಸಿ), <i>Shigru</i> (Drum Stick, ನುಗ್ಗೆ ಕಾಯಿ) <i>Shaleya</i> (Fenugreek/ ಮೆಂತೈ ಕಾಳು) , <i>Mrushtaka</i> (Mustard/ ಸಾಸಿವೆ)	<i>Hrudya</i>	
	<i>Tumburu</i> (Ratten spice/ ತೇಜ ಫಲ, <i>Shrungaveraka</i> (Dry Ginger/ ಶುಂಠಿ)	<i>Teekshna, Ruksha, Kapha-Vatanashaka</i>	
	<i>Lashuna</i> (Garlic/ ಬೆಳ್ಳುಳ್ಳಿ)	<i>Ushna Veerya, Vatagna Shushka – Vata-Kapha Nashaka</i>	
	<i>Grunjanaka</i> (Carrot/ ಗಜರಿ)	<i>Vata-Kaphahara</i>	
	<i>Kharahva</i> (Jeera/ ಜೀರಿಗೆ)	<i>Kapha Vata Nashaka</i>	
7.	<i>Gorasa Varga</i> (Milk and its Products)		
	<i>Ushtra Dugdha</i> (Camel milk/ ಒಂಟೆ ಹಾಲು)	<i>Ruksha, Laghu</i>	
	<i>Chaga Dugdha</i> (Goat Milk/ ಮೇಕೆ ಹಾಲು)	<i>Kashaya-Madhura Rasa, Laghu</i>	
	<i>Dhadhi Manda</i> (scum of curds/ ಮಂದ ಮೊಸರು)	<i>Sroto Shodhaka, Vata- Kapha Nashaka</i>	
	<i>Takra</i> (Butter Milk/ ಮೆಜ್ಜಿಗೆ)	<i>Ruksha, Agni Deepana, Kapha-Vata-Medohara, Hrudya</i>	
8.	<i>Aharopayogi Varga</i> (Accessory Food Articles)		
	<i>Sarshapa Taila</i> (Mustard Oil/ ಸಾಸಿವೆ ಎಣ್ಣೆ)	<i>Katu Rasa, Ushna Veerya, Kapha-Vata Nashaka</i>	
	<i>Tila Taila</i> (Sesame Oil/ ಎಳ್ಳೆಣ್ಣೆ)	<i>Agni Vardhaka, Vatanashaka, Ushna Veerya</i>	
	<i>Atasi Taila</i> (Flax Seed oil/ ಅಗೆಸೆ)	<i>Ushna Veerya, Vata Nashaka</i>	
	<i>Maricha</i> (Pepper/ ಕಾಳು ಮೆಣಸು)	<i>Kapha Shoshaka, Agni Deepaka, Kapha-Vata Shamaka</i>	
	<i>Shushka Pippali</i> (Dry Pepper/	<i>Kapha-Vata Nashaka, Ushna Veerya</i>	

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	<i>Shunti</i> (Dry Ginger/ ಶುಂಠಿ)	<i>Agni Deepaka, Hrudy</i>	
	<i>Saindhava Lavana</i> (Rock Salt/ ಕಲ್ಲುಪು)	<i>Deepana, Tridosha Nashaka</i>	
	<i>Yavani</i> (Ajwain/ ಓಮ)	<i>Agni Deepaka, Vata-Kapha Nashaka</i>	
	<i>Trijata</i> ( <i>Twak, Ela, Patra</i> ) / <i>Chaturjata</i> ( <i>Trijata</i> + <i>Nagakeasara</i> )	<i>Ruksha, Agnideepaka</i>	
	<i>Trikatu</i> ( <i>Shunti, Maricha, Pippali</i> )	<i>Kapha-Vatajit, Sthoulyahara</i>	
9.	<i>Krutanna Varga</i> (Different preparations)	<i>Peya</i> (Thin gruel/ ತಿಳಿ ಗಂಜಿ)	<i>Agni Vardhaka</i>
	<i>Vilepi</i> (Thick gruel/ ಗಟ್ಟಿ ಗಂಜಿ)	<i>Laghu, Hrudy</i>	
	<i>Manda</i> (Gruel water/ ನೀರು)	<i>Agni Deepaka</i>	
	<i>Brushhta Tandulakruta Odana</i> (ಅಕ್ಕಿ ಗಂಜಿ)	<i>Kapha Vikaranut</i>	
	<i>Sattu</i> (Flour prepared from different grams)	<i>Ruksha</i>	
	<i>Dhana/ Vatya</i> (Barley preparation)	<i>Lekhana</i>	
10.	<i>Udaka Varga</i> (Water)	<i>Usha Ambu</i> (ಬಿಸಿ ನೀರು)	<i>Kapha-Medo-Anilaghna, Deepana, Sada Pathya</i>
11.	<i>Taila Varga</i> (Oils)	<i>Tila Taila</i> (ಎಣ್ಣೆಣ್ಣೆ)	<i>Lekhana, Vayu-Kaphahara</i>
	<i>Eranda Taila</i> (ಹರಳೆಣ್ಣೆ)	<i>Srotovishodhana, Vata-Kaphahara</i>	
	<i>Sarshapa Taila</i> (ಸಾಸಿವೆ ಎಣ್ಣೆ)	<i>Kapha-Medohara</i>	
12.	<i>Madhu Varga</i> (Honey)	<i>Purana Madhu</i> (Old Honey)	<i>Lekhana, Hrudy, Medo Rogahara, Laghu</i>

DISCUSSION

Ahara, Nidra and Brahmacharya are considered as *Trayopasthambha*<sup>26</sup> of life and *Pathya* (wholesome) food have a major role to play in preventing and curing of a disease. *Pathya* is considered as one of the synonyms of *Bheshaja*<sup>27</sup>. It is said that food articles and medicines do have a variety of effects on body depending on the dosage, time, mode of preparation, geographical location, the body constitution of the patient and *Doshas*. Hence, the physician who desires success in treatment shall consider effects of the natural properties of the drugs and dietary articles, as well as the usage patterns associated with such articles<sup>28</sup>. On the other hand

“*Apathya*” can cause vitiation or imbalances in *Doshas, Dhatus* and *Rasas* thus causing diseases. Hence adopting “*Pathya*” would be the most important aspect of treatment<sup>29</sup>. Dyslipidemia can be taken as the *Snehamsha Vruddhi* or the *Abhaddha Medas Paribhramana* in *Dhatus* especially in *Rasa* and *Rakta Dhātu* which could be caused due to *Agni Mandya* at the level of *Dhatvagni*, which can be considered as the defect in Lipid metabolism. Thus *Agni Vardhaka, Kapha-Medohara Ahara* would be beneficial in case of Dyslipidemia.

CONCLUSION

Lightness or heaviness of eatables is determined by the types of combination, methods of preparation and proportions in which ingredients

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are added to them<sup>30</sup>. Thus based on the above concepts the dietary protocol to be adopted in Dyslipidaemia.



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