A DATA BASE STUDY OF DIET FOR OBESE DIABETES WITH SPECIAL REFERENCES TO DIABESITY
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ABSTRACT
The goals of maintainable blood sugar level, weight loss and sustainable nutrition of an Obese Diabetic patient, attainable by using dietary therapy, are principles of the management of Diabesity. Diabesity is a syndrome complex, which comprises Central obesity, Type 2 Diabetes Mellitus, Hypertension, Hyperlipidemia, Systemic inflammation and Prothrombotic state. Diet and Regimen have been considered to be the adoptable measures of the very first step for the management of Diabetes and obesity. ‘Ayurveda’, the science of life, flamboyantly describes the Ahara Dravyas to the Obese Diabetic (Sthula Pramehi) patients and calls those Dravyas preventive therapeutics for them. Different types of cereals, pulses, vegetables, oils, fruits, liquids and others have been revealed in this study as having logistic effects in the obese Diabetic patients, though the effects depend on availability, economic condition, tolerance, desire, physical condition, level of digestion, and predominance of doshas of the patients. In the present study, effort was made to rule out the Ahara Dravyas as prescribed by the ancient health providers, viz., Charaka, Sushruta etc. in both allopathic and Ayurvedic classics for the benefit of the patients, health providers, dieticians and research scholars in the coming era. The ancient erudite used the principle of diet application for all types of Prameha, including Madhumeha (T2 Diabetes), to enhance the agni and to reduce the Meda and Kleda, meaning low caloric diet and low Glycemic index. To get an enhancing effect of agni and reducing effect of Meda and Kleda, they prescribed Ahara Dravyas, which included the katu, tikta and kasaya in Rasa; laghu, ruksha and tikha in Guna; ushna in Virya and tikhna in Vipaka. It is guessed that these Ahara Dravyas have low caloric and low glycemic index. Modern medical science puts emphasis on calorie and glycemic index for the treatment of Diabetes and Obesity. It is stated in Charaka Samhita that, if a person consumes such food and uses the regimen maintaining the equilibrium / homogenous state of the dhatu, he will never suffer from Prameha, excluding Jata Prameha. The goal of diet in obese diabetes can be stated as:

Goal of Diet
Control of blood parameters and reduction of calorie value can improve the condition of diabetic.
Maintenance of normal blood sugar and serum lipid level.
- Improvement of overall nutrition.
- Prevention and postponement of complication.
- Reduction of 500-600 calories/day.

**Inclusion Criteria of Choice of Diet (Ahara Dravyas)**

The Ahara vargas, screened and selected from different Ayurvedic classics, were based on (i) Availability and (ii) Properties of the Dravyas and (iii) Economic condition, (iv) Tolerance to the dravyas, (v) Physical condition, (vi) Desire, (vii) Level of digestive power and (viii) Predominance of the doshas of the patient.

The Ahara vargas are
- Cereals (Sukadhanya varga),
- Pulses (Samidhanya varga),
- Vegetables (Saka varga),
- Oil (Sneha varga),
- Fruits (Phala varga),
- Liquid (Paniyavarga, Mutra varga, Madya varga) etc.

**Inclusion Criteria of Properties of Diet (Ahara Dravya) for Obese Diabetes**

- Apatarpaniya Dravya (Desaturating diet)
- Ruksha dravya
- Ushna virya
- Diet, which mitigates the vata, slesma and meda and reduces vata, slesma and meda
- Katu, tiktta and kasaya in taste
- Katu vipaka
- Meat-Jungle animal

**The Selections from the Ahara Dravyas**

<table>
<thead>
<tr>
<th>SN</th>
<th>English Name</th>
<th>Sanskrit Name</th>
<th>Rasa</th>
<th>Guna</th>
<th>Virya</th>
<th>Vipak</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Amla</td>
<td>Rasa</td>
<td>Laghu, Snigdha, Tikta</td>
<td>Ushna</td>
<td>Katu</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Bael fruit</td>
<td>Vartula</td>
<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Barley*</td>
<td>Rajaphala</td>
<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
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</tr>
<tr>
<td>4</td>
<td>Bittergourd*</td>
<td>Rajaphala</td>
<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
<td></td>
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<tr>
<td>5</td>
<td>Carrot*</td>
<td>Rajaphala</td>
<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
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</tr>
<tr>
<td>6</td>
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<td>Rajaphala</td>
<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
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<tr>
<td>7</td>
<td>Cucumber</td>
<td>Rajaphala</td>
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<td>Ushna</td>
<td>Katu</td>
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<tr>
<td>8</td>
<td>Cumin Seed</td>
<td>Rajaphala</td>
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<td>Ushna</td>
<td>Katu</td>
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<td>9</td>
<td>Cluster fig</td>
<td>Rajaphala</td>
<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Fenugreek</td>
<td>Methi</td>
<td>Laghu, Snigdha</td>
<td>Ushna</td>
<td>Katu</td>
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<tr>
<td>11</td>
<td>Fish (River and pond)*</td>
<td>Matshya</td>
<td>Snigdha, Guru</td>
<td>Ushna</td>
<td>Katu</td>
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<tr>
<td>12</td>
<td>Garlic</td>
<td>Lasun</td>
<td>Snigdha, Tikha, Pecchila, Guru, Sara.</td>
<td>Ushna</td>
<td>Katu</td>
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<td>13</td>
<td>Ginger</td>
<td>Vartula</td>
<td>Laghu, Snigdha (Sunthi), Guru Ruksha, Tikha (Adra)</td>
<td>Ushna</td>
<td>Madhura</td>
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<td>14</td>
<td>Green peas</td>
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<td>Ushna</td>
<td>Katu</td>
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<td>15</td>
<td>Green Gram</td>
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<td>Ushna</td>
<td>Katu</td>
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<td>16</td>
<td>Horse Gram</td>
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<td>Ushna</td>
<td>Katu</td>
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<td>17</td>
<td>Indian Gooseberry</td>
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<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
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<tr>
<td>18</td>
<td>Indian persimmon</td>
<td>Tinduka</td>
<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
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<td>19</td>
<td>Jambul*</td>
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<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
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<tr>
<td>20</td>
<td>Lady’s finger</td>
<td>Vartula</td>
<td>Laghu, Ruksha</td>
<td>Ushna</td>
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<tr>
<td>21</td>
<td>Luke warm water</td>
<td>Vartula</td>
<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
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<tr>
<td>22</td>
<td>Mustard</td>
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<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
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<tr>
<td>23</td>
<td>Onion*</td>
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<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
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<tr>
<td>24</td>
<td>Persian Lilac</td>
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<td>Ushna</td>
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<td>26</td>
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<td>Ushna</td>
<td>Katu</td>
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<tr>
<td>27</td>
<td>Old Sali rice</td>
<td>Vartula</td>
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<td>28</td>
<td>Spinach leaves</td>
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<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
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<tr>
<td>29</td>
<td>Tomato</td>
<td>Vartula</td>
<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
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<tr>
<td>30</td>
<td>Turn Berry*</td>
<td>Vartula</td>
<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
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<tr>
<td>31</td>
<td>Whey*</td>
<td>Vartula</td>
<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
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<td>32</td>
<td>Wild snake gourd</td>
<td>Vartula</td>
<td>Laghu, Ruksha</td>
<td>Ushna</td>
<td>Katu</td>
<td></td>
</tr>
</tbody>
</table>

**Table 1: Ahara dravyas recommended for obese diabetes**

- Amla, Rasa, Laghu- Snigdha, Tikha, Vipak, Katu
- Bael fruit, Vartula, Laghu- Ruksha, Ushna, Katu
- Barley, Rajaphala, Laghu- Ruksha, Ushna, Katu
- Bittergourd, Tinduka, Laghu- Ruksha, Ushna, Katu
- Carrot, Rajaphala, Laghu- Ruksha, Ushna, Katu
- Chicken, Rajaphala, Laghu- Ruksha, Ushna, Katu
- Cucumber, Rajaphala, Laghu- Ruksha, Ushna, Katu
- Cumin Seed, Rajaphala, Laghu- Ruksha, Ushna, Katu
- Cluster fig, Rajaphala, Laghu- Ruksha, Ushna, Katu
- Fenugreek, Methi, Laghu- Snigdha, Ushna, Katu
- Fish (River and pond), Matshya, Snigdha, Guru, Ushna, Madhura
- Garlic, Lasun, Madhura, Lavan, Katu, Tikta, Kasaya (Katu Pradhan), Snigdha, Tikha, Pecchila, Guru, Sara.
- Ginger, Sunthi, Katu, Laghu, Snigdha (Sunthi), Guru Ruksha, Tikha (Adra), Ushna, Madhura
- Green peas, Vartula, Kasaya, Madhura, Guru, Ushna, Madhura
- Green Gram, Mung Dal, Kasaya, Madhura, Laghu, Ushna, Madhura
- Horse Gram, Kulattha, Kasaya, Madhura, Lavan, Laghu, Ruksha, Tikha, Ushna, Katu
- Indian Gooseberry, Amla, Madhura, Amla, Katu, Tikta, Kasaya, Guru, Ruksha, shita, Ushna, Madhura
- Indian persimmon, Tinduka, Kasaya, Ruksha, Ushna, Madhura
- Jambul, Rajaphala, Kasaya, Madhura, Amla, Laghu, Ruksha, shita, Ushna, Madhura
- Lady’s finger, Bhenda, Madhura, Shita, Guru, Snigdha, Shita, Madhura
- Luke warm water, Ushnadak, - , Laghu, Shita, Madhura
- Mustard, Sarsapa, Katu, Tikta, Snigdha (Oil), Tikha, Ruksha, Ushna, Katu
- Onion, Palandu, Madhura, Katu, Guru, Tikha, Snigdha, Ushna, Madhura
- Persian Lilac, Mahanimbha, Tikta, Kasaya, Tikta, Kasaya, Shita, Ushna, Madhura
- Radish, Muli, Katu, Laghu, Ushna, Madhura
- Rock Salt, Saindhav, Esad swada, Laghu Ushna, Ushna, Katu
- Old Salicylic acid, Sali, Madhura, Snigdha, Guru, Laghu, Shita, Madhura
- Spinach leaves, Palokytha, - , - , - , -
- Tomato, Tamator, - , - , - , -
- Turn Berry, Harsidra, Tikta, Katu, Laghu, Ruksha, Ushna, Katu
- Whey, Takra, Kasaya, Madhura, Amla, Laghu, Ruksha, Ushna, Madhura
- Wild snake gourd, Patola, Tikta, Laghu, Ruksha, Ushna, Katu
CONCLUSION
It was observed in this study that 32 Ahara Dravyas of different species along with their functional properties may be ruled out as recommended for Obese Diabetes. The Rasas, viz., Katu, Tikta and Kasaya, were found in almost all the selected dravayas in this study, while the Gunas found in most of the dravayas were Laghu and Ruksha. The other Gunas, viz., Snigdha, Tikkha, Shita, Guru, Ushna, Sara and Picchila Gunas were less in number. The Viryas were Ushna and Shita, while the Vipakas were Katu and Madhura in the Ahara Dravayas. The Lavan and Amla Rasas were found as conjugate Rasas with other predominant Rasas. The data has been shown in Table 1. It was also observed that each variety of the Ahara dravayas, mentioned in the Ayurvedic texts of the ancient times, is still available in India. The current scenario reflects that some diseases like Diabetes and Obesity are more prone to develop due to wrong adoption of life style and diet. As a result, like some other ill health conditions, Diabesity need to be prevented with the help of proper Diet and Regimen. The study suggested that all obese diabetes patients can take these Ahara Dravayas of various forms in their day to day meals easily, instead of taking unplanned diet. Its further scope may be enjoyed by the researcher in enlightening the pharmacokinetics and pharmacodynamics of these dravayas. It is guessed that the calorie and Glycemic index of these dravayas may be low. The Ahara dravayas found to be effective by the study and this may be considered by the health providers, dieticians, patients and coming research scholars as effective Ayurvedic foodstuffs for Diabesity.

REFERENCES

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