TO STUDY THE EFFECT OF VYOSHADI VATI ON MEDOVRIDDHI (DYSLIPIDEMIA) W.S.R. TO LIPID PROFILE

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ABSTRACT

Today’s present life style is tremendously altered from last decade. Everyone in society has set the goal of his/her life. To achieve the same no one conscious about their own health, result to development various diseases. Medovriddhi (Dyslipidemia) is one of them & it is big challenge worldwide. Due to lack of physical exercise, mental stress, overeating, sedentary lifestyle Medovriddhi is commonly observed. The present study was carried out to assess the efficacy of Vyoshadi Vati on Medovriddhi (Dyslipidemia) with special reference to Lipid Profile. In entire study 30 patients were enrolled at SMBT Ayurved College, Dhamangaon, Nashik Maharashtra from Nov 2012 to August 2013. Only Medovriddhi subjects were selected by simple randomized method & others were excluded. All the patients were treated with Vyoshadi Vati for 8 weeks with follow up after 2 weeks. Lipid Profile was done in all patients before & after treatment. Result of therapy was evaluated on the basis of improvement in symptom & biochemical parameter (lipid profile). For statistical analysis paired t test & chi-square test was applied. Conclusion of this study is Vyoshadi Vati is moderately effective on Medovriddhi (Dyslipidemia).

Keywords: Ayurved, Dyslipidemia, Lipid profile, Medovriddhi, Vyoshadi Vati.

INTRODUCTION:

In today’s era everybody are busy in his /her own work to achieve the goal of his /her life. Ayurved describe how to live healthy & happy life. For that Ayurvedic treatises describes the Dincharya (Daily regimen), Ritucharya (Seasonal regimen), dietary ethics & regulations. Ayurved is Indian system of medicine that aims to emphasize over prevention & maintenance of complete health & to provide cure for ailments.¹ But in today’s life no one is taking care of own heath. Due to artificial lifestyle many people are suffering from various diseases. Most of peoples consume high caloric & fat saturated diet & reductions in physical activities. This lead to Agnimandya & results in reduced utilization of energy. Medadhatu in body provide maximum calories for the purpose of derivation of energy. If it is underutilized or accumulate in excess then it will start to increase & finally leads to Medovriddhi, which also contribute to develop the dis-
ease known as Sthaulya. This ‘Sthaulya’, described almost in all major Ayurvedic Classics is similar to obesity. Dyslipidemia is associated with obesity. Dyslipidemia alone currently affects more than 10% of the global population and India is no exception to this. Obesity is said to lead to 30,000 premature deaths each year and it is shortening the lives of people by an average of nine years.

Many theory have been put forwarded with many new hypothesis describing this disorder in Ayurveda as well as modern science, still there is enough scope to work out in its management aspect of Medovriddhi (dyslipidemia). On the above concept present study was carried out. In the pathogenesis of Medovriddhi (dyslipidemia) Kledaka Kapha, Samana & Vyanvayu, Medadhatu & Medodhatwagni Mandyta were main responsible factor. So accordingly theory was selected which effect on the factor. Main aim was to restore function of Medodhatwagni. So in this study Tikta Rasa, Katu vipaka & Ushna Virya predomient drug in compound formulation of Vyoshadi Vati was selected. Guda (Jaggery) has potency to penetrate up to cellular level. Along with Guda (Jaggery) Amlarasa predominate Amlavetas (Garcina pedunculata) mainly restore the function of Medodhatwagni. Keeping in mind above concept project was carried out.

**AIM AND OBJECTIVES:**
**Aim:** To study the effect of Vyoshadi Vati on Medovriddhi (Dyslipidemia) w.s.r. to lipid profile.

**Objectives:**
1. To study the aetiology, pathology, symptomatology & progress of Medovriddhi (Dyslipidemia).
2. To stress the importance of studying the Medovriddhi (Dyslipidemia).
3. To educate the people to decrease the rising trend of Medovriddhi (Dyslipidemia) worldwide.

**MATERIAL AND METHODS:**

**Selection of drug:**
Trial drug Vyoshadi Vati is polyherbal formulation in the form of Vati. Total 9 drugs are described in Vyoshadi Vati in Rasatantrasara & Siddha Prayog Samghraha Part I.

**Procurement of drug:** Ingredient of Vyoshadi Vati namely
1. Suntha (zinzerofficinale),
2. Marich,(piperlongum),
3. Pippali (piperlongum),
4. Amlavetas(Garcina pedunculata),
5. Chavya(Chavivaruburghii)
6. Talispatra(Abies webbiana),
7. chitrak (Plumbago Zeylancia)
8. Jiraka (Cuminun Cyminum)
9. Guda (Jaggery) (Black).

All drugs were first identified & authenticated from authority of SMBT Ayurved pharmacy Dhamanagaon Nashik Maharashtra. The raw materials were collected from authorized dealers of raw drugs supplying to SMBT Ayurved pharmacy.

**Method of preparation of drug**
All the above mentioned drugs were taken in equal quantity in powder form except Guda (Jaggery). Guda (Jaggery) was taken 4 times of all mixture powder. Guda (Jaggery) & all powder were mixed properly & tablets were prepared.

**Standardization of investigational drug:**
Trial drug was sent for Standardization to department of pharmaceutics of SMBT College of Pharmacy Dhamanagaon Nashik Maharashtra. Trial drugs hardness, disintegration
time, dissolving time etc. Parameter was checked.²

RESEARCH DESIGN:

Study Population:
An accessible population of adolescence patients in SMBT Ayurved Hospital, Dhamanagaon Nashik Maharashtra who were suffering from Medovriddhi (Dyslipidemia) participated in the study.

Sampling: Simple random sampling technique.

Study Sample: The patient from periphery area of Dhamangaon, Nashik Maharashtra having clinical manifestation of Medovriddhi (Dyslipidemia) were enrolled.

Sample Size:
30 patients having clinical features of Medovriddhi (Dyslipidemia), willingly participated in study were selected from SMBT Ayurved Hospital Dhamnagaon.

Study Setting:
The study was carried out at SMBT Ayurved Hospital, Dhamangaon Nashik from Nov 12 To August 2013 with due written consent of patient.

Diagnostic Criteria:
A special proforma was prepared including sign & symptoms of Medovriddhi (Dyslipidemia). Every patient was subjected to physical examinations. Patient of Medovriddhi (Dyslipidemia) were only enrolled. Total Cholesterol level above 240 mg was also kept main diagnostic criteria for the selection of patient. Other necessary investigations were carried out to exclude the other pathology.

Inclusion Criteria:
1. The patients of either sex, having age between 30 to 70 representing with sign & symptoms of Medovriddhi (Dyslipidemia) from SMBT Ayurved Hospital, Dhamangaon Nashik, Maharashtra.
2. Patients of Medovriddhi (Dyslipidemia) or associated with IHD or hypertension or familial dyslipidemia.
3. Patients willing to participate with written consent in study.

Exclusion Criteria:
1. Patients of acute MI or acute LVF required hospitalization.
2. Post MI or heart failure.
3. Patients of nephrotic syndrome.
4. Renal disorder.
5. Liver cirrhosis.
7. Endocrine abnormality which is or appear to be causative factor of Medovriddhi (Dyslipidemia).

Ethical Consideration: Ethical clearance was obtained from institutional ethical committee of SMBT Ayurved College & Hospital, Dhamangaon, Nashik, Maharashtra.

Criteria of withdrawal: Increase symptom like cough, dyspnoea, & not willing to continue.

Time & duration of study: The total study period was 10 months i.e from Nov 2012 to August 2013.

TECHNIQUE OF DATA COLLECTION: The patients suffering from Medovriddhi (Dyslipidemia) with clinical manifestation were included in this study. As per inclusion criteria patient were enrolled. The patients in the SMBT Ayurved Hospital Dhamangaon Nashik were
thoroughly interrogated; history & facts were noted in a specialised structural clinical proforma based on *Ayurvedic* Classical frame work incorporating physical status examination. General information of patients & its family, chief complaints to know manifestations of disease, past history, history of present illness, family history, personal history to get information on diet, appetite, *nidra* (sleep), *vyasan* (addiction), allergies if any. Systemic as well as *Dashvidh* examination also done. *Asthavidh* examination also included in proforma. Patients were treated with *Vyoshadi Vati*. Before & after treatment lipid profile was carried out with fasting venous sample. The feedback obtained from patients which included graded responses. The information of effect of trial drug obtained after every 2 weeks.

**TREATMENT METHODOLOGY & SCHEDULE:**
As per inclusion criteria patients were selected by simple randomised method. Methodology of treatment for the patients as follows

1. Tablets were prepared according to *Rsatantrasara* & *Siddhaprayog Sangraha* Part I.
2. 3 tablets of 500 mg were given thrice a day with hot water before meal for 8 weeks.
3. Patients were allow taking normal diet but advised to avoid oily & fat containing diet.
4. Patients also advised 20 minute brisk walking. Follow up was done after every 2 weeks. Before & after treatment lipid profile was carried out with fasting venous sample.

**ASSESSMENT CRITERIA:** The improvement in patient was assessed mainly on the basis of following points.
1. Decreased level of lipid components.
2. Improvement in sign & symptoms of disease.
The improvement in sign & symptoms were assessed by adopting following score method.

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Symptom</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Absent</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Present after heavy work, relived soon &amp; tolerable</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>After moderate work, relived later &amp; tolerable</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>After little work, relived later &amp; tolerable</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>After little work, relived later &amp; intolerable</td>
<td>4</td>
</tr>
</tbody>
</table>

A. *Shwasas* (Dyspnoea)

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Symptom</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Normal thirst</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Up to 1 liter excess intake of water</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Up to 1 to 2 liter excess intake of water</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Up to 2 to 3 liter excess intake of water</td>
<td>3</td>
</tr>
</tbody>
</table>

B. *Atpipasa* (Excessive intake of water)
5 More than 3 liter excess intake of water

C. Other Symptom

<table>
<thead>
<tr>
<th>Sr. No</th>
<th>Symptom</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Absent</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Mild</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Moderate</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>Marked</td>
<td>3</td>
</tr>
<tr>
<td>5</td>
<td>Severe</td>
<td>4</td>
</tr>
</tbody>
</table>

Considering the overall improvement shown by patients in signs & symptoms the total effect of therapy was assessed in terms of complete remission, improved, moderately improved, mildly improved, & unchanged as follows

1. Complete remission: Complete relief 100% in sign & symptoms was taken as complete remission
2. Markedly improved: patient showing improvement more than 75% in sign & symptoms was taken as markedly improved
3. Moderately improved: patient showing improvement up to 50 to 75% in sign & symptoms was taken as moderately improved
4. Mildly improved: patient showing improvement up to 25 to 50% in sign & symptoms was taken as mildly improved
5. Unchanged: below 25% relief in signs & symptoms of Medovriddhi.

ADVERSE EFFECT OF EVALUATION CRITERIA:
Evaluation & reporting of adverse effect was done as per guidelines of National Pharmacovigilence Programme for Ayurveda, Siddha, & Unani (ASU) drugs.

DATA ANALYSIS:
Statistical evaluation of data was done using mean, SD, percentage. For statistics paired t test was applied for quantitative data & for qualitative data Chi-square test was applied.

1. Effect of Vyoshadi Vati on Medovriddhi (Dyslipidemia) w.s.r to total cholesterol.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Before treatment</th>
<th>After treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>265.51</td>
<td>262</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>13.05</td>
<td>14.90</td>
</tr>
</tbody>
</table>

Paired t – 0.001354 P< 0.01 – more significant. Table shows that Vyoshadi Vati shows effect on total cholesterol.

2. Effect of Vyoshadi Vati on Medovriddhi (Dyslipidemia) w.s.r to triglycerides.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Before treatment</th>
<th>After treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>186.66</td>
<td>184.77</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>15.22</td>
<td>14.66</td>
</tr>
</tbody>
</table>

Paired t – 0.0406 P < 0.05 – significant, table shows that Vyoshadi Vati also shows effective on triglycerides.

3. Effect of Vyoshadi Vati on Medovriddhi (Dyslipidemia) w.s.r to HDL.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Before treatment</th>
<th>After treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>31.70</td>
<td>32.92</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>2.23</td>
<td>4.68</td>
</tr>
</tbody>
</table>
4. Effect of Vyoshadi Vati on Medovriddhi (Dyslipidemia) w.s.r to LDL.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Before treatment</th>
<th>After treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>196.4815</td>
<td>192.15</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>14.42</td>
<td>15.82</td>
</tr>
</tbody>
</table>

Paired t – 0.171637 P>0.05 – non significant. It means that HDL level increases after the consumption of Vyoshadi Vati.

5. Effect of Vyoshadi Vati on Medovriddhi (Dyslipidemia) w.s.r to LDL.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Before treatment</th>
<th>After treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
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<td>192.15</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>14.42</td>
<td>15.82</td>
</tr>
</tbody>
</table>

Pired t – 0.000531 P < 0.001 – highly significant, Vyoshadi Vati most effective on LDL. It decreases the LDL cholesterol effectively.

6. Effect of Vyoshadi Vati on Shwasa (dyspnoea). As it was qualitative variable so Chi Square test was applied.

Chi Square test 2 Df p = 0.4753 p>0.05 insignificant. It means that dyspnoea is not relieved by Vyoshadi Vati.

7. Effect of Vyoshadi Vati on pipassa (excessive thirst)

Chi Square test 1 Df p = 0.056 p>0.05 insignificant. It means that Vyoshadi Vati is ineffective on pipassa.

8. Effect of Vyoshadi Vati on other symptoms

Chi Square test 2 Df p = 0.007 p<0.01 more significant. It means that Vyoshadi Vati is effective on other symptoms of Medovriddhi (Dyslipidemia)

8. Overall effect of Vyoshadi Vati on Medovriddhi (Dyslipidemia)

<table>
<thead>
<tr>
<th>Results</th>
<th>Number of patients</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete remission</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>Markedly improved</td>
<td>01</td>
<td>3.70%</td>
</tr>
<tr>
<td>Moderately improved</td>
<td>12</td>
<td>44.44%</td>
</tr>
<tr>
<td>Mildly improved</td>
<td>08</td>
<td>29.62%</td>
</tr>
<tr>
<td>Unchanged</td>
<td>06</td>
<td>22.22%</td>
</tr>
</tbody>
</table>

Above table shows that Vyoshadi Vati moderately effective on Medovriddhi (Dyslipidemia).
OBSERVATION & RESULTS:

A total of 30 patients were enrolled for this project. Out of which, 3 patients were dropped out in the course of study. Male preponderance 70% over female 30% was seen indicating male are more prone to Medovriddhi (Dyslipidemia). 83.33% were married while 16.67% were unmarried. Prevalence of Medovriddhi (Dyslipidemia) in context to occupation was more seen in business type. Socio-economically 46.66% patients were belonging to higher economical condition. According to diet, 53.44% patients were non-vegetarian. Analysis of Prakruti revealed about one third of patients were belonging to Kaphavata. Statistically it was proved that Vyoshadi Vati is effective on lipid components. Symptoms wise dyspnoea & excessive thirst was not relieved by this drug. Overall therapy effect of this drug is moderately effective.

DISCUSSION:

In Ayurveda, Medovriddhi (Dyslipidemia) is described almost in all compendia. The pathogenesis which was described in Ayurvedic treatises same was seen in patients. Due to over saturation, intake of heavy sweet, cold & fatty diets, indulgence in day sleeping, lack of mental work & genetic defect; entire body becomes oily, abdomen & flanks becomes obese, subjects suffers from cough, asthma & he smells very bad. Dyslipidemia is defined as abnormality of serum lipids & lipoproteins, including low level of HDL cholesterol & increased level of LDL cholesterol. The patients of Medovriddhi (Dyslipidemia) show same scenario. The sterol is present in most body tissue part. This cholesterol is synthesized from multiple of acetyl CoA. These molecules will get accumulated in excess quantity on body. The same may causes problems to health. Ayurveda also describe in same fashion i.e underutilization of energy (medodhatu) leading to Medovriddhi. Therefore there is scope to put these two things in same compartment. Cholesterol in body disturbed in variety of lipoprotein. The majority is in the form of LDL & VLDL, moderately in the form of intermediate density lipoprotein, & much smaller in HDL. By this project it proved that LDL cholesterol is increased in Medovriddhi (Dyslipidemia) & it can be lowered down by effective therapy & diet management.

PROBABLE MODE FOR ACTION:

In the pathogenesis of Medovriddhi, predisposing factor was Kapha vitiates diet & vihar. Prime factor was Medodhatwagni mandya. It leads to excessive growth & accumulation of Medodhatu. Most of drug having Tikta Rasa, Katu Vipaka & Ushana Virya. They also have function like Kaphasaman & lekhan (depletive). Amapachana & Dhatu-Shoshan properties of Vyoshadi Vati normalize the function of Agni. The drugs possess the Tikta Rasa which helps in the clearing the obstruction in the Srotas (channels). Kapha & Medadhatu both are Prithvi & Jala Mahabhuta entities. So in the management of Medovriddhi drug must be opposite of these two Mahabhut in dominance. This achieved by Tikta Rasa as it has Khara property & it is Vayu & Aakash Mahabhut predominated Rasa which is opposite in Medadhhatu. Amlarasa & Guda (Jaggery) has potency to reach at cellular level & restore function of Medodhatwagni. The ethandic extract of ginger have extensively studied & it has been proved that it has hypcholesterolemic & hypotriglycerideremic effect. It also increases HDL level.
CONCLUSION:
The extensive study of Nidan panchaka (Pathogenesis) & treatment of Medovriddhi, it is revealed that Medodhatawagni Mandiya is prime factor & sedentary lifestyle is leads to Medovriddhi. From observation & statistical analysis it is proved that Vyoshadi Vati is moderately effective on Medovriddhi (Dyslipidemia).

LIMITATIONS: The study was limited to single geographical area. Sample size was very small.

Recommendations for future research: This research work was an honest effort to verify the efficacy of Vyoshadi Vati on Medovriddhi but any other view for further study is humbly recommended. Since being small sample size, this study has its own limitations so need have work in better sample size is required.

Acknowledgement: We would like to thank our friend Dr Nitin Pandav who really helps in entire project. We take this opportunity to thank Dr Sapana Ade, Dr Ravi Usturage, & Dr Nitin Gavane who helped us at every stage of this project.

REFERENCES:

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