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TO STUDY THE EFFICACY OF AYURVEDA-BASED COMPREHENSIVE DIABETIC CARE (CDC) PROGRAM IN OVERWEIGHT MALE TYPE-II DIABETIC PATIENTS

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ABSTRACT
In India, it is estimated that around 1/10th of the population is inflicted by DM, with significantly high mortality rates. Despite availability of plethora of therapeutic options for treatment of type II DM, its prevalence and contribution to global morbidity and mortality remains significantly high and is increasing continuously. The HbA1c levels are more important as it is an independent predictor of mortality and morbidity in diabetic patients and also reflects the average blood sugar control over the past 1-2 months. Hence, this study was conducted to evaluate the efficacy of Ayurveda-Based CDC program on Glycosylated hemoglobin (HbA1c) in overweight male Type-II DM Patients. **Methods:** This study was conducted from March 2017 to May 2018, Data of Type II DM patients who had received minimum 6 CDC sittings over 90 days(±15 days) and followed low carb diet plan in the out-patient departments(OPDs) at Madhavbaug clinics in Kolhapur, Maharashtra was identified. The patients were administered with Panchkarma therapy namely Snehana i.e. oleation, Swedana i.e. passive heat therapy and Basti of Gudmaar(*Gymnema sylvestre*), Daruharidra(*Berberis aristate*) and Yashtimadhu (*Glycyrrhiza glabra*) 100 ml Kwatha i.e. per rectal drug administration. In this study, the variables [HbA1c, weight, BMI, abdominal girth and dependency on medications] were assessed on day 1 and day 90 of CDC. **Results**: Fifteen male overweight male Type II diabetic patients were considered for analysis. There was significant improvement in HbA1c by 1.58%(from 8.38±1.24 to 6.8±0.52; $p<0.001$), weight by 4.05kg (from 76.37±8.09 to 72.31±8.17, $p<0.001$). BMI(from 27.44±2.28 to 25.87±2.05; $p<0.001$) and Abdominal girth(from 99.8±6.97 to 94.33±7.68; $p<0.001$) also showed significant reduction. **Conclusion**: Ayurveda-based CDC program found to be efficacious by reducing HbA1c in overweight male Type-II diabetic patients.

KEYWORDS: Madhavbaug Daruharidra(*Berberis aristate*) and Yashtimadhu (*Glycyrrhiza glabra*) patients.

INTRODUCTION
According to prevalence of DM - II in India regarding obesity is higher than that of other diseases.

And many of researches has proven that its a metabolic & lifestyle disorder which can be reversed through correction of dietary habits and lifestyle.[1]

Prevalence of Obesity & Type 2 Diabetes
In our country, only about a one third of adults are considered to be of 'Normal' weight, and similar trends are being observed worldwide.

At the turn of this century 171 million individuals were estimated to have diabetes, and this is expected to increase to 366 million by 2030.[2]

Type 2 Diabetes is caused by the body's in ability to break down sugars from the diet. Normally, cells in the pancreas work to release insulin, a hormone that can process sugar and either send it to cells that need it for energy or store it as fat for future energy needs. Cells in the liver are responsible for clearing insulin from the circulation. But excess fat in the pancreas and liver can start to shut down these insulin-producing cells, leading to spikes in blood sugar levels. Diabetes medications can bring sugar levels down but do not address the compromised insulin machinery.[6]

AIM
To Study the Efficacy of Ayurveda-based Comprehensive Diabetic Care (CDC) Program in Overweight Male Type-II Diabetic Patients.

OBJECTIVES
In India, it is estimated that around 1/10th of the population is inflicted by DM accompanied by obesity with significantly high mortality rates and is increasing continuously.[3]

The HbA1c levels are more important as it is an independent predictor of mortality and morbidity in

diabetic patients and also reflects the average blood sugar control over the past 1 to 3 months. Hence, this study was conducted to evaluate the efficacy of Ayurveda-Based CDC program on Glycosylated hemoglobin(HbA1c) in overweight male Type-II DM Patients.

METHODOLOGY

Protocol

This study was conducted from March 2017 to May 2018in the out-patient departments (OPDs) at Madhavbaug clinics in Nagpur, Maharashtra

* Data of 15 no.of Type II DM patients who had received -
* Minimum 10-12 CDC sittings of Panchakarma over 90 days (±15 days)
* Low carbohydrates diet plan (800 Kcal) i.e Prameha Diet
* Oral herbal anti diabetic medicines – Cap. Glynoma (Gudmar, Haridra, Amalki)
1bd Before meal with
* Anupana (vehicle Medicine) - Diapram Kadha (Gudmar, Guduchi) 10 ml bd.
* Guidance for Lifestyle Modification & Exercise

Study Design

An Observational Cohort Study.

Inclusion Criteria

- 15 male patients are selected for the study
- Age group 28 to 65 yrs
- Diagnosed as DM-2
- HbA1c > 7 %
- Having BMI-Above 25
- Having no other pathophysiology

Exclusion Criteria

- Patients with HbA1c < 7%
- Diabetic pts with low BMI
- Diabetic pts with early MI

*The patients were administered with Panchakarma therapy namely -
- Snehana (Oleation,)
- Swedana (Passive heat therapy)
- Basti (Per rectal drug administration.) of Gudmaar (Gymnemas ylvestre), Daruharidra (Berberis aristate) and Yashtimadhu (Glycyrrhiza glabra) 100 ml Kwatha.

In this study, following variables were assessed on day 1 and day 90 of CDC. Which are
*HbA1C
*Weight
*BMI
*Abdominal Girth
*Dependency on medications
Data analyzed statistically By Graph pad software using unpaired t-test which results are as follows-

RESULTS

Fifteen overweight male Type II diabetic patients were considered for analysis.

There was significant improvement as follows-
HbA1c by 2.04% (from 8.38±1.24 to 6.3±0.41; p<0.001),
Weight by 7.66kg (from 78.94±8.6 to 71.28±7.44, p=0.014).
BMI by 2.8 (from 28.23±1.48 to 25.43±1.44; p<0.0001)
Abdominal girth by 8.0cm (from 100.4±6.21 to 92.40±7.44; p<0.001.

Table No. 1: Improvement Chart.

Column1	Day 1				Day 90			
SR.NO	BMI	Weight	AG	Hba1c	BMI	Weight	A.G	Hba1c
1	27.22	64.5	95	7.2	22.56	55.6	84	6.8
2	27.54	79.6	96	7.4	23.11	66.8	85	6.7
3	27.16	81.5	110	7	25.39	76	98	5.6
4	27.24	61.3	97	8.2	25.73	57.9	87	6.8
5	28.38	80.1	96	7	25.9	73.1	78	6
6	27.07	73.7	91	7.3	25.49	69.4	85	5.9
7	27.4	82	104	9.52	25.55	76.4	99	6.7
8	27.28	77	97	9.6	25.09	70.8	98	6.2
9	31.11	84.7	109	10.2	26.92	73.3	100	6.5
10	27.93	88.5	95	7.2	23.99	76	88	6.2
11	31.23	87.1	108	9.9	27.11	75.6	101	6.4
12	27.16	70.4	97	7.7	26.62	69	95	6
13	30.62	88.5	109	8.44	27.75	83.6	100	5.8
14	28.1	76.5	105	10.3	24.61	67	98	6.6
15	28.15	89.2	99	8.8	24.84	78.7	90	6.3

Table No. 2: Improvement in Drug Dependency.

DRUGS	BASELINE	DAY 90 STATUS
SULFONYLUREA	5 (33%)	4 (26%)
BIGUANIDE	12 (80%)	10(66%)
DPP-4 INHIBITOR	2 (13%)	1 (6%)
INSULIN	2 (13%)	0
NO ALLOPATHY MEDICINES	1 (6%)	6 (40%)

• Out of 15 pts -
• 5 (33%)pts were having Salfonylurea after t/t no. reduces to 4 (26%)
• 12(80%) pts were having Biguanide after t/t no. reduces to 8 (53.33%)
• 2 (13%) pts were having DPP 4 Inhibitor after t/t no. reduces to 1 (6%)
• 2 (13%) pts were having insulin after t/t no. reduces to 0
• 1 pt was on No allopathic medicine from beginning & after T/t had HbA1C below 6%
• 6(40%) pts were GTT Negative after T/t & got medicine free life.

CONCLUSION

In the present study total 15 male patients are enrolled.

Total 6 pts are GTT negative and stopped all the Oral Hypoglycemic Agents.

1 patient which is newly diagnosed, had no allopathic medicines at all and on Ayurvedic med. have HbA1C below 6% after T/t.

Remaining patients are with decreased HbA1C as a result of this their medicines are tapered down.

Means CDC Programme showed the significant results in HbA1C and other metabolic parameters in type 2 DM patients & decreased their dependency on allopathic medicines.

Ayurveda-based CDC program found to be efficacious by reducing HbA1c in overweight male Type-II diabetic patients.

REFFERENCES

1. *https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5763039/Association of obesity with hypertension and type 2 diabetes mellitus in India: A meta-analysis of observational studies
Giridhara R Babu, G V S Murthy, Yamuna Ana, Prital Patel, R Deepa, Sara E Benjamin Neelon, Sanjay Kinra, andK Srinath Reddy
2. *https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4277009/(Sugar Intake, Obesity, and Diabetes in IndiaSeema Gulati and Anoop Misra*
3. *https://mediaindia.eu/business-politics/obesity-and-diabetes/
Obesity and diabetes
A growing concern for India
By Arachika Kapoor Posted On: June 17, 2016 in Business & Politics, News - Biz@India, New Delhi
4. *https://www.downtoearth.org.in/news/health/india-must-tackle-high-rate-of-obesity-diabetes-global-nutrition-report-of-2016-54434
5. *https://www.ncbi.nlm.nih.gov/pubmed/27515855Obesity, Diabetes and Cardiovascular Diseases in India: Public Health Challenges.
Shrivastava U, Misra A1, Mohan V, Unnikrishnan R, Bachani D.
6. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4259868/
Mechanism linking diabetes mellitus and obesity
Abdullah S Al-Goblan,1 Mohammed A Al-Alfi,1 and Muhammad Z Khan2
7. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3912882/
Phytochemical and Pharmacological Properties of Gymnema sylvestre: An Important Medicinal Plant
Pragya Tiwari, 1 B. N. Mishra, 2 and Neelam S. Sangwan
8. Therapeutic importance of Haridrea*(Cicuma Langa linn*) in the management of madhumeha w.s.r to type 2 (NIDM)
1Megha G. Pandya*, 2Neky Mehta, 3Rita Khagram
9. Critical Review on Anti-Diabetic Activity of Haridra (Turmeric) *1Dr. Archana P. Kadu and 2Dr. Anju Hadke
10. https://www.ncbi.nlm.nih.gov/pubmed/24577384