



A study on assessing the prescription pattern and medication adherence of allopathic and ayurvedic medication on type 2 DM patients

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ABSTRACT

Diabetes Mellitus (DM) is a metabolic disorder which is increasing considerably throughout the world, and among this, the greatest number is from India which makes it to be called as diabetes capital of the world. A cross sectional descriptive study conducted in subjects of BMCH and AAMC Hospitals of Chitradurga taluk. Out of 120 subjects included in the study, 60 subjects are from BMCH and 60 subjects are from AAMC Hospitals. Samples are of between 21-60 aged male patients and a self-designed questionnaire has been filled and analyzed. Among 120 patients, 60 patients are Allopathic and 60 patients are Ayurvedic. In Allopathic, age between 31-40 (2nd Group) are high (32%) and in Ayurvedic, age between 41-50 (3rd Group) are high (62%). Prescription pattern is different in both Allopathic and Ayurvedic Medication, its dose is given according to the age and considering other diseases. Quality of Life is in three stages Better, Good, Bad. In Allopathic 80% patients are better and in Ayurvedic 65% patients are good. This study is essential to bring the awareness and knowledge regarding the prescription pattern and medication adherence of Allopathic and Ayurvedic medication for Type 2 DM patients.

Keywords: Diabetes Mellitus, Prescription Pattern, Medication Adherence


INTRODUCTION

Diabetes mellitus is a common and very prevalent disease affecting about 25 % of world population. India has the largest Diabetes population in the world with an estimated 41 million people, amounting to 6% of the adult population. Diabetes mellitus is a clinical syndrome characterized

mainly by hyperglycaemia due to absolute or relative deficiency of insulin. Lack of insulin affects the metabolism of carbohydrate, protein and fat and causes significant disturbance of water and electrolyte homeostasis. Increased demand of Ayurvedic medicine due to high cost and innumerable side effects of allopathic medications is of vital importance. Panchakarma also have a

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major part to do with prevention and management of Diabetes as these are purificatory procedures which removes the stagnated, vitiated Doshas out of body in a natural way. Now a day many Ayurvedic herbal or herbo-mineral formulations have been used in the treatment of Diabetes mellitus throughout the world. As prevention is better than cure hence prevention of disease with Pathyakara Aahara and Vihara accomplished with Yoga and Naturopathic procedures has major role in preventing the type II Diabetes, hence this is an attempt to explain the prevention and management of Diabetes in Ayurveda.¹

The Ayurveda describes a set of complex clinical conditions with frequent, abnormal miction, collectively called Prameha, that in many ways correlate with obesity, metabolic syndrome, and diabetes mellitus. Obesity, metabolic syndrome, and diabetes mellitus have in common that they are all three metabolic disorders. In the pathogenesis of Prameha, the role of intermediate metabolites is vital because it is an acquired disease due to incorrect metabolism of nutrients. In Ayurveda, Ama refers to toxic intermediates of digestion and metabolism due to incompletely digested food. In Ayurveda, diabetes mellitus falls under the Prameha category. Prameha comes from the original word Mih sechane, and that means “water that dilutes everything in the body.” It is a disease in which the Doshas are out of balance. Prameha is a collective term of 20 disorders in which the entire urinary system is involved, characterized by excessive urination with abnormal values.²

Traditionally, hundreds of herbs are used in Ayurveda. According to ethnobotanical information, there are as many as 800 different plants used in the traditional treatment of diabetes mellitus.² Treating diabetes without adverse side effects remains a significant challenge, and Ayurveda can play an essential role in it. The far-reaching differentiation in primary and secondary Dosha typing in Ayurveda makes it possible to fine-tune the therapy to the person.³

People are resorting to herbal therapy as an alternative for mainstream therapy with a perception that it is a natural remedy for diabetes. Despite that, only limited hypoglycemic herbs have been researched for their efficacy. This article aims to review up to date findings on the efficacy, side effects of herbs. Mainstream drugs tend to establish glucose homeostasis either by promoting insulin secretion or by glucose uptake by muscle cells. These drugs known to have adverse side effects. Administration of external insulin does not always matches the cell demands and oral anti diabetic agents have limitations. Both do not establish complete glucose homeostasis and also in long

term usage drug resistance would develop. These disadvantages encourage patients to adapt to alternative therapies such as Ayurveda. In Ayurveda, individual and poly herbal formulations are widely used and will have synergistic effects. Although, Ayurvedic formulations have been used conventionally as herbal remedies for centuries, to date only limited research has been conducted on the therapeutic benefits of Ayurvedic formulations for managing type 2 diabetes. However, it is commonly reported that, herbal remedies cause fewer side-effects relative to pharmacological interventions and could provide a natural alternative or an adjunct therapy to other interventions. The purpose of this review is to look at the open literature related to commonly used herbal remedies for type 2 diabetes and Outline the potential benefits and related safety concerns.

MATERIALS AND METHODS

Study Site: Selected Patients in BMCH and Amrutha ayurvedic medical college in Chitradurga city.

Study Design: This was a Cross-sectional Descriptive Study.

Study Period: This study was conducted for a period of six months.

Study Subjects: 21-60 years old male patients.

Inclusion Criteria:

- Male patients of age 21-60yrs.
- Male patients who are working and non-working.
- Male patients who are taking Ayurvedic and Allopathic medications.
- Male patients of both nuclear and joint family.
- Patients who are admitted in Male Medical Ward

Exclusion Criteria:

- Male patients who are having severe illness.
- Male patients who are above 60 years of age.
- Male patients who are taking other medications. (Unani, Sidha etc.)

Sources of Data.

- Treatment chart collected from patients admitted in BMCH and Amrutha Ayurvedic Medical College Hospital
- Interaction between type-2 DM Patients.
- Interaction between Doctors of BMCH and AAMCH.
- AAMCH College Library.
- BMCH College Library.

RESULTS

Prescription Pattern: Prescription pattern is based on the other diseases the patients are having. Because some of the drugs are contraindicated in some situations and they have to plan their diet according to that. Commonly used drugs in Allopathic are given below. These doses may change according to the patient's condition.

Table 1: Drugs given for Allopathic patients

1	Tab.Isryl-M2
2	Tab.Istauret
3	Insulin
4	Inj.Actrapid/TabGlycomate GP-1
5	Tab.Metformin
6	Tab.Thiazolidinediones

Commonly used drugs in Ayurvedic are given below.

Table 2: Drugs given for Ayurvedic patients

1	Bhadraashree Kashayam
2	Chavyadi Kashayam
3	Chathusaram Kashayam
4	Thrijathakam Kashayam
5	Khadirathi Kashayam
6	Musthaabhayadi Kashayam
7	Insulin
8	Trivanga Bhasma
9	Ashvattha
10	Triphala Churna

Distribution of quality of life: According to the Morinsky's Medication Adherence scale questions are prepared and classified as Better, Good, and Bad. In Allopathic 80% (N=48) of patients are having better QOL and 20% (N=12) of patients are having bad QOL. In Ayurvedic 35% (N=21) of patients are having better QOL and 65% (N=39) of patients are having good QOL.

Table No – 3:- Distribution of Quality of Life

Sl.no	Quality of life	Allopathy	Percentage	Ayurvedic	Percentage
1	Better	48	80%	21	35%
2	Good	0	0	39	65%
3	Bad	12	20%	0	0
	Total	60	100%	60	100%

Figure No – 1:- Distribution of Quality of Life



DISCUSSION

Diabetes mellitus (DM) affects 5-6% of global adult population. "World Diabetes Congress" summarized on 14th Nov.2009; that Diabetes is expected to affect 380 million by 2025. Every 10 seconds a person dies from Diabetes related disorder. India has the largest Diabetes population in the world with an estimated 41 million people, amounting to 6% of the adult population. As age progresses, in either sex, the probability to get Diabetes increases. In the population that is above 60 years of age, approximately 18.3 percent have Diabetes¹. Ayurvedic point of view Diabetes is a disease which is caused due to Nidana Sevana that aggravates Kapha and vitiates Meda Dhatu in the body². According to Penta- element theory both Kapha and Meda are Jala tattva predominant. Greater omentum and kidneys are the Moolasthan of Meda dhatu. Hence when Jalatwa is disturbed patient suffers from excessive urination and excessive thirst. For Kapha predominance major sight is Urah i.e. chest and Amashaya i.e. Stomach. In Trividha Avastha Paka, Achha Pitta is said to be prepared in Adho Aamashaya which can be considered as both gastric secretions and secretions from common bile duct as it is again watery in nature. If the Kapha is vitiated then ultimately Pitta also gets malformed. Hence for the management of disease reconstruction of vitiated Pitta and Kapha is required. All causative factors described in Ayurvedic classics prove that it is a life style disorder and which may have a genetic predisposition³. This is a disease of digestive power derangement, it is accepted in all texts unanimously that due to excess Meda (fat) all Strotasa (channels) gets blocked which leads to frequent hunger and thirst to the patient. The digestive power at the same time is not sufficient to digest whatever heavy food patient consumes out of false hunger. This in turn aggravates the symptoms. Hence this vitiated excess Kapha and Meda will cause further complications of disease. The management lies predominantly in the triad of decreasing Kapha subsequently deranged and malformed Meda Dhatu, increasing or correcting digestive phenomenon and maintaining good state of mind. A number of lifestyle factors are known to be important for the development of type 2 Diabetes. In one study, those who had high levels of physical activity, a healthy diet, did not smoke, and consumed alcohol in moderation had an 82% lower rate of Diabetes. When a normal weight was included the rate was 89% lower. In this study a healthy diet was defined as one high in fiber, with a high polyunsaturated to saturated fat ratio, and a lower mean glycemic index. Obesity has been found to contribute to approximately 55% type II Diabetes and decreasing consumption of saturated

fats and trans-fatty acids while replacing them with unsaturated fats may decrease the risk. Environmental toxins may contribute to recent increases in the rate of type 2 Diabetes. A positive correlation has been found between the concentration in the urine of bisphenol A, a constituent of some plastics, and the incidence of Type 2 Diabetes.⁴ Also Acharya Charaka says regular bathing and walk will help in reducing the probability of occurrence of Madhumeha⁵. Further elaborating the fact he claimed that Sthaulya (obesity) and Karsha (Emaciation) both are dependent on two factors mainly i.e. food habits and sleep of the individual⁶. As the matter of fact it is already proved that obesity leads to Madhumeha. Pathyakara Aahara Vihara, Pranayama, Yogasanas etc. play vital role in preventing Diabetes mellitus. Therefore the present paper has been designed with following aims and objectives i.e. to focus upon purificatory procedures (Panchakarmika and Shatkarmika) and herbo- mineral formulations effective in managing type II Diabetes along with Pathya Aahara and Vihara (Yogasanas) as Ayurvedic treatment regime for diabetics and to chart out a non-invasive, cost effective, easily adoptable but effective changes, according to Ayurveda, in lifestyle and diet style for prevention of disease.⁷

Sansgiry *et al.*; conducted a study on Allopathic anti-diabetic medications: pharmacist's perspective and concluded that pharmacists need to be well informed of the anti-diabetic drugs which have a potential. Better communication strategies between pharmacists and patients may help pharmacists understand the issues of patients. Anti-diabetic drugs was identified in many countries Pharmacists do play an essential role in counselling patients. Pharmacist vigilance can help reduce abuse. The current health care system calls for more regulation on anti-diabetic medications, especially those with elders potential integrated Pharmacy Research and Practice 2017:6 1-6¹

Frokjaer B *et al.*, conducted study on Prevalence of drug related problems in self-medication of anti-diabetic in Danish community pharmacies. DRPs were identified for 21.0 % of OTC-customers and for 20.0 % of all OTC requests. On average, a customer with a DRP had 1.5 DRP. In the German study, DRPs were identified in 17.6 % of all self-medication requests and in 18.3 % of all patients. In both countries there was only a small difference in the result per customer and the result per drug request. The frequency of DRPs is slightly higher in Denmark than in Germany, but the overall level was similar. Study underline that self-medication is frequently associated with risks.⁶

Cooper RJ *et al.*, Conducted a study on anti-diabetic medicine – a review of the literature and concluded that diabetic product was occurring in their area as 67.8% and 68.5%, respectively.⁷

Davies J *et al.*, Conducted a study on Origins and Evolution of Anti-diabetic drugs and concluded that the importance and value of ayurvedic drugs cannot be overestimated; we are totally dependent on them for the treatment of diabetic, and they should never be considered mere commodities. Notwithstanding all good intentions to control antibiotic usage (but limited action), there is little doubt that the situation with respect to antibiotic resistance is grim. Resistance mechanisms are pandemic and create an enormous clinical and financial burden on health care systems worldwide. There are no simple solutions to the problem.¹⁰

Amirimoghadam P *et al.*, conducted a study on Evaluation and awareness of anti-diabetic use of ayurvedic drugs. The current study had some limitations. The number of pharmacies managers who agreed to participate in this study was low (10 among nearly 100). This might lead to loss of a large number of drugs purchasers. Also, in this study, a notable number of purchasers bought drugs for someone else, and this caused invalid, insufficient and missing data. Additionally, the responsible pharmacists recorded the purchasers'

data, but sometimes the pharmacists missed some purchasers because of their high workload.¹³

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CONCLUSION

On the basis of the above discussion, it can be concluded that, both Allopathic and Ayurvedic medications are used by subjects. The study revealed about different prescription pattern in both medications. Most of the subjects included in the study were not having enough knowledge regarding the use of drugs and most of the subjects are farmers. After our interventions, we found that we could able to improve knowledge regarding appropriate use of anti-diabetic medication. Overall the medication adherence is good in subjects that lead them to have a satisfied quality of life.

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