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A Brief Comparative Effectiveness Research (CER) about Conventional and Homeopathic Treatment of Type 2 Diabetic Patients

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Abstract

Background: The purpose of this study was to compare the effectiveness of homeopathy in type 2 diabetes to see if advising to integrate it with conventional therapy, popularizing its use, or limiting it due ineffectiveness.

Methods: In a retrospective study the data of thirty-one type 2 diabetic samples from Shariati Hospital and thirty-one type 2 diabetic from two homeopath MDs offices were collected and analyzed by SPSS.

Results: The average values for hemoglobinA1c (HbA1c), fasting blood glucose(FBS) and 2-hour postprandial blood glucose (2hpp) in homeopathic group were at the beginning of treatment 8.6%, 172.8 and 226.5 mg/dL, and after treatment, 7.8%, 149.4 and 204.8 mg/dL and in conventional medicine group, at the beginning of treatment 10.5%, 216 and 302.4 mg/dL and after treatment, 8.3%, 147 and 215.5 mg/dL and all treatment outcomes better at the end with p-values<0.001 and after treatment the results in both groups was not significantly different (p values=0.22, 0.86, 0.48, respectively), but the HbA1c mean was 0.5% less in homeopathic group.

Conclusion: Regarding the values of HbA1c and FBS and 2hpp before and after homeopathic treatment suggests the effectiveness of homeopathic treatment in type 2 diabetes. This study certainly cannot conclude that homeopathic treatment alone can be more effective than or as effective as conventional medicine. However, according to reducing in the number and dose of anti-diabetic drugs and better conditions of patients, integrating homeopathy in their treatment could be recommended.

Keywords

Type 2 Diabetes; Complementary and alternative medicine (CAM); Homeopathy; Comparative Effectiveness Research (CER)

Introduction

Alongside conventional medicine CAM (Complementary and Alternative Medicine) treats and restores health to the patients and is widely used preventing the diseases in healthy individuals. Studies in other countries show significant use of complementary methods. Three reports (2002, 2007 and 2012) of National Institutes of Health (NIH) referring to CAM reached to about 40% [1,2]. In a study by Chang from Australia, the approach to CAM for the treatment of diabetes has been reported as 72.8% [3]. Our method was a brief comparative effectiveness research (CER). CER is designed to inform health-care decisions by providing evidence on the effectiveness, benefits, and harms of different treatment options. In CER we can look at the available evidence and records. The goal of CER helps physicians and medical providers and health policy makers to make informed decisions to improve health care in both the individual and social level [4].

Diabetes is a metabolic disorder and relatively common chronic diseases which its prevalence and incidence in many communities, especially in developing countries is increasing. Overall, half of all people with diabetes are unaware of their disease. Lack of control of disease complications in the future will increase [5]. The screening tests used to detect diabetes are blood glucose levels and HbA1c [6]. The World Health Organization declared that homeopathy is the second largest medical system that is used worldwide. One major difference between homeopathy and conventional medicine is that in homeopathy trying to restore balance to the body [7]. In Pomposelli study the following result was concluded: "It was possible to treat patients with homeopathy, monitored by the conventional diabetes specialist, without any major problem of compatibility between the two forms of therapy" [8]. *Lycopodium clavatum* (n=132), Phosphorus (n=27) and Sulphur (n=26) were the medicines most frequently prescribed in Chaturbhuja study and was concluded homeopathic medicines may be effective in managing the symptoms of diabetic polyneuropathy patients [9].

The purpose of this study was to compare the effectiveness of homeopathy in type 2 diabetes. It is important for health stakeholders to see if advising to integrate homeopathy with conventional therapy, popularizing its use or limiting it due ineffectiveness.

Methods

The study was a retrospective study. From February 2014 till august 2015 the records of type 2 diabetic patients at the Shariati hospital of Tehran Medical Sciences and two Medical doctor offices with homeopathy method by a random sampling method and the data were collected by means of a questionnaire.

Inclusion criteria

Patients with type 2 diabetes, with complete records data and who have had more than one subsequent visit to the doctor.

Exclusion criteria

Patients with incomplete laboratory results, who are addicted to drugs and alcohol, who have died during treatment, children and the elderly over 80 years old, diseases such as transplant patients and cancer, more than 1 year from the last visit to the doctor and if other interventions is used to treat diabetes. By sample size calculation at least 26 patients per group is required and due to the possible omit

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of some patients in each study arm 31 patients with type 2 diabetes in each group is selected. After data collection, data were analyzed by SPSS version 22.0 software and the means were compared by t-test and qui-square, with significant level of 0.05.

Results and Discussion

Data of sixty-two patients with type 2 diabetes was collected. The average duration of diabetes, diet and exercise levels, BMI value (27.92 ± 4.26 in conv. and 27.41 ± 3.74 in hom.), the number of people with high blood pressure, lipid profile, triglyceride and LDL and HDL are not significant (Table 1).

In both group FBS, 2-hour postprandial blood glucose and HbA1c before treatment are not significantly different but because of four outliers in the range of data in conventional group (there are inpatients) the range differs. In Figure 1 we can see this difference for FBS. In Table 2 the p-values are reported and due this different range we analyzed the study by unequal variance t-test.

In Table 3 in two groups the values of HbA1c, FBS and 2-hour postprandial blood glucose after treatment are compared and there is no significant difference. Only it is to mention the physicians with homeopathic treatment claim a lower HbA1c in their patients. There is a 0.5 difference in HbA1c between two groups (the homeopathic group has lower values) but it is not statistically significant and for a conclusive decision a larger sample size in future studies is recommended.

Conclusion

Regarding the values of HbA1c and FBS and 2hpp before and after homeopathic treatment suggests the effectiveness of homeopathic treatment in type 2 diabetes. According to the results, we can say that homeopathy is effective in treatment of type 2 diabetes, but it is not clear whether the results are better than conventional medicine. In homeopathy due its holistic look the patient's life style and diet has improved and this could be considered as an advantage. In patients who have chosen homeopathic remedies it can be seen that the frequency and the dose of anti-diabetic medicine are decreased. In some patients after some time no medication is needed. Also a lower HbA1c which is not statistical significant (larger sample size is needed for proving this hypothesis) (Tables 4 and 5).

One of the disadvantages in homeopathic group was the higher number of visits to the homeopath. However, homeopathic medicines are less expensive and with regard to reducing the use of conventional drugs it is in terms of cost savings. Also less complications such as hypoglycemia (common side effects is another advantage of homeopathic treatment.

Table 1: The study of education, exercise, blood pressure, diseases blood fat, drugs, diet.

		Conventional medicine		Homeopathy	
		Frequency	**Percent**	**Frequency**	**Percent**
Sex	Female	17	55	21	68
	Male	14	45	10	32
Education	Under Diploma	22	71	15	48.4
	Diploma Holder	9	29	12	38.7
	Bachelor	0	0	4	12.9
Exercise	Daily	6	19.4	8	25.8
	Weekly	9	29	8	25.8
	No Exercise	16	51.6	15	48.4
Blood pressure		17	54.8	13	41.9
Diseases blood fat		23	74.2	22	71
Drugs	**Metformin** **Glibenclamide**	28 11	90.3 35.5	26 13	83.9 41.9
Diet		8	25.8	14	45.1

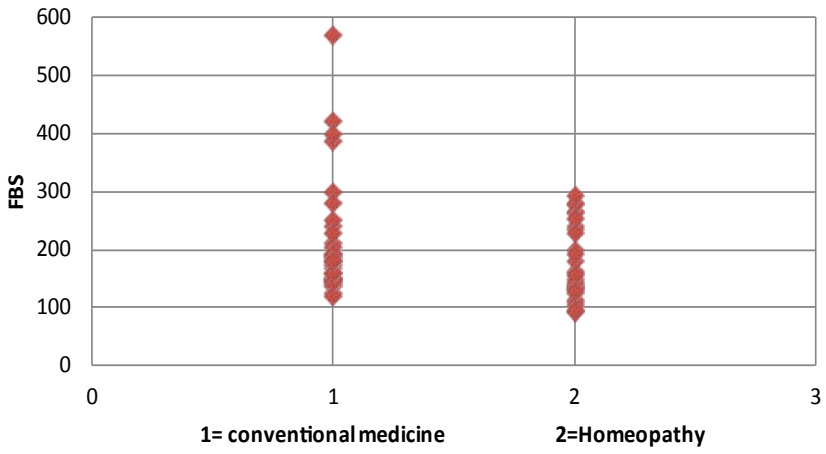

Figure 1: Distribution of FBS in the two treatment groups.

Table 2: HbA1c values and FBS and 2hpp before treatment in both groups.

	Group	N	Mean	Standard Deviation	P Value
HbA1c before treatment	**Conventional medicine**	31	10.5	2.28	
	Homeopathy	31	8.6	1.95	0.53
FBS before treatment	**Conventional medicine**	31	216	102.4	
	Homeopathy	31	172.8	62.75	0.01
2hpp before treatment	**Conventional medicine**	31	302.5	99	
	Homeopathy	31	226.5	83.08	0.02
Fasting blood sugar (FBS) and hemoglobin A1c (HbA1c) and 2-hour postprandial blood glucose (2hpp) at the begin					

Table 3: HbA1c values and FBS and 2hpp after treatment in both groups.

	Group	N	Mean	Standard Deviation	P Value
HbA1c after treatment	**Conventional medicine**	31	8.3	1.47	0.22
	Homeopathy	31	7.8	1.80	
FBS after treatment	**Conventional medicine**	31	147.06	51.64	0.86
	Homeopathy	31	149.42	51.36	
2hpp after treatment	**Conventional medicine**	31	215.58	59.89	0.48
	Homeopathy	31	204.81	60.36	
Fasting blood sugar (FBS) and hemoglobin A1c (HbA1c) and 2-hour postprandial blood glucose (2hpp) after treatment					

Table 4: Values FBS and HbA1c and 2hpp, before and after treatment in homeopathy.

	Mean	N	Standard Deviation	P Value
HbA1c before homeopathic treatment	8.6	31	1.95	<0.001
HbA1c after homeopathic treatment	7.8	31	1.80	
FBS before homeopathic treatment	172.81	31	62.75	<0.001
FBS after homeopathic treatment	149.42	31	51.36	
2hpp before homeopathic treatment	226.55	31	83.08	<0.001
2hpp after homeopathic treatment	204.81	31	60.36	
Hemoglobin A1c (HbA1c), fasting blood sugar (FBS) and 2-hour postprandial blood glucose (2hpp) after homeopathic treatment				

Table 5: Values HbA1c, FBS and 2hpp, before and after treatment in conventional medicine.

	Mean	N	Standard Deviation	P Value
HbA1c before conventional treatment	10.5	31	2.28	<0.001
HbA1c after conventional treatment	8.3	31	1.47	
FBS before conventional treatment	216	31	102.4	<0.001
FBS after conventional treatment	147.06	31	51.6	
2hpp before conventional treatment	302.45	31	99.1	<0.001
2hpp after conventional treatment	215.58	31	59.9	
Hemoglobin A1c (HbA1c), fasting blood sugar (FBS) and 2-hour postprandial blood glucose (2hpp) after homeopathic treatment				

Another limitation of this study was that the patients who were treated in homeopathic group continue conventional medicine and homeopathic physicians recommend the conventional treatment tapped step by step. So, this study certainly cannot conclude that homeopathic treatment alone can be more effective than or as effective as conventional medicine. However, according to reducing in the number and dose of anti-diabetic drugs and better conditions of patients, integrating homeopathy in their treatment could be recommended.

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