International Journal of Advanced Biotechnology and Research (IJBR)
ISSN 0976-2612, Online ISSN 2278–599X,
Vol-8, Issue-4, 2017, pp569-573
http://www.bipublication.com

Research Article

A Case Control Study on Alternative Medication a Risk Factor For Renal Failure

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ABSTRACT

Objective: To assess the association of complementary and alternative medicine (CAM) use with renal failure among type 2 diabetics.
Study Design: Case Control Study.
Place and Duration of Study: Jinnah Hospital, Lahore, from March 2016 to August 2016.
Method: This case control study included 100 patients of type2 Diabetes with renal failure seeking treatment from dialysis unit of hospital as cases and 100 type 2 diabetic patients without renal failure as controls. The sample was selected through non-probability purposive sampling technique. Data was collected using a structured questionnaire after obtaining informed consent from the patients. Data were analyzed by SPSS software Version 17.0. Variables such as type of hypoglycemic drug used, use of hakim, herbal and homeopathic medications were included and analyzed by calculating Odds ratio and P-value to determine their relationship with renal failure among type 2 diabetics.
Results: In this study, 62% males and 38% females were in the case group and 43% males and 57% females were in the control group. Mean age of cases was 61.27 $\pm$ 7.3 and mean age of controls was 57.41$\pm$ 7.1. Regarding complementary and alternative medications use, Hakim medication was used by 25% of cases and 14% of controls having Odds ratio of 2.048 with 95% CI (1.00, 4.22). Herbal medication was used by 10% of cases and 4% of controls having OR of 2.667 with 95% CI (0.807, 8.806). Homeopathic medication was used by 19% of cases and 6% of controls having odds ratio to be 3.675 with 95% CI (1.40, 9.64).
Conclusion: In Pakistan the prevalence of complementary and alternative medicine for many chronic illnesses like diabetes is quite high. This is associated with many serious complications such as renal failure.

Keywords Used: Diabetes, Complementary and Alternative medicine (CAM), Renal failure.

INTRODUCTION:

Diabetes Mellitus is one of the most common non-communicable debilitating medical conditions that, despite recent medical advances, still lead tohigh burden of morbidity and mortality around the globe.The recent estimates are that the prevalence of diabetes will be 7.7% of the world population by the year 2030. The Eastern Mediterranean Region has the highest burden of diabetes in the world with an estimated 9.2% of the adult population suffering from the disease.[1] Pakistan has an estimated 7 million diabetic population in 2015 and it is projected to reach 11.5 million in 2025 and 14.4 million by year 2040.[2]

Diabetes is associated with a number of microvascular and macrovascular complications.These complications can be prevented through strict glycemic control which

requires considerable life style modifications and compliance to prescribed medications throughout the life.[1] Lack of adherence to these regimens may lead to serious consequencesfor the patient as well as health systems, such as increase in health cost due to complications.[1]Most of the patients of chronic diseases like diabetes require medication use for the entire life this factor lead to use of alternative modes of treatment.[1]

Complementary and alternative medicine (CAM) is defined as a large group of diverse medical and healthcare systems, practices, and products that are outside the boundary of conventional allopathic medicine recognized in most countries.[3,4]

CAM are divided into four broad classes. Skill-based therapy, biologically based therapy, spiritual therapy, and supernatural therapy. Biologically based alternative medications are commonly used and studied for the treatment of diabetes.[5]

It is estimated that around 70% of the developing world's people still depends, relays and use the alternative medications on regular basis. In Pakistan, people find alternative treatments for almost all kind of diseases.[6] The percentage of CAM users varies, area wise (mainly from urban to rural areas), according to the type of disease and awareness level. Most common illnesses for which alternative medications are used by Pakistani population include chronic diseases like cardiac diseases, cancer, diabetes, renal diseases, epilepsy, infertility, asthma etc.

In Pakistan a number of alternative treatment providers prevail such as "Hakeem" (Natural Therapist),Homeopaths, Quacks, "Pehalwan" (Traditional bone and joint therapists), "Dai" (mid wife), "Peer Faqeer" (Religious/spiritual healers)etc. Most of the patients use alternative medicine as replacement to the allopathic drugs. Most of these alternative medications have no scientifically proven data of their safety and efficacy. The possibility of drug interactions of alternative medicines with allopathic medicine cannot be ruled out. Most of the CAM are administered at inconsistent doses which may lead to serious health effects or even mortality.[7] The objective of this study was to evaluate role of Complementary and alternative medication with renal failure among type 2 diabetics.

[II] METHODS:

This case control study was carried out at Jinnah hospital, Lahore, Pakistan. The cases were diabetes type 2 patients with renal failure seeking treatment from dialysis centre of the hospital. The controls were selected from diabetic centre of Jinnah hospital having type 2 diabetes mellitus for at least 5 years without renal failure. In diabetic centre of Jinnah hospital Lahore, routine laboratory investigations were carried out to monitor the glycemic control of patients. The last urine analysis report (done in last 6 months) was assessed for all the controls to rule out diabetic renal disease.

Open Epi software was used for sample size calculation with 80% power of study, 5% level of significance and 50% use of alternative medication among cases of renal failure as compare to 14%use among controls. The sample was selected through non-probability purposive sampling technique. Data was collected by the researcher using a structured questionnaire after obtaining informed consent from the patients.

Data were entered and analyzed using SPSS software Version 17.0. Age is presented as mean $\pm$ S.D. Gender and duration of diabetes are presented as frequency and percentage.

All variables such as type of hypoglycemic drug used, use of hakim, herbal and homeopathic medication are analyzed by calculating Odds ratio and P-value to determine their relationship with renal failure among type 2 diabetics. The variable duration of diabetes is stratified to rule out confounding effect. Oddsratio of ≥ 2 is considered as statistically significant.

[III] RESULTS:

This case control study selected 100 diabetics with renal failure as cases and 100 diabetics without renal failure as controls. Mean age of cases was 61.27 $\pm$ 7.30 and mean age of controls was

57.41±7.10. There were 62% males and 38% female patients among the case group and 43% males and 57% female diabetics in the control group. The mean duration of diabetes in the case group was 14.81 ± 4.75 (years). In the control group mean duration of diabetes came out to be 12.32±5.38 (years). Regarding use of complementary and alternative medications, Hakim medication was used by 25% cases and 14% controls. Odds ratio was calculated as 2.048 with 95% CI (1.00, 4.22). Herbal Medication was used by 10% of cases and 4% of controls with an Odds ratio of 2.667 95% CI (0.80, 8.80). Homeopathic medication was used by 19% cases and 6% controls with calculated odds ratio to be 3.67 with 95% CI (1.40, 9.64).

[IV] DISCUSSION:

This case control study has demonstrated a statistically significant association between hakim and homeopathic medication with renal failure among type 2 diabetics. Association of herbal medication with renal failure among type 2 diabetics was not demonstrated statistically significant in this study.

A case control study carried out at Taiwan demonstrated low socioeconomic status, history of hypertension, diabetes, and regular use of alternative or over-the-counter Chinese herbs as significant risk factors for renal failure. In this study 200 cases and 200 controls were selected to determine the association of hypertension and use of traditional and alternative medications with renal failure. Among the cases that is patients with renal failure, 50.5% reported use of alternative medication. Among controls (without renal failure) only 14% reported use of alternative medication with calculated odds ratio to be 6.14, depicting a strong association.[8]

Another case control study in India was conducted on 200 subjects with objectives to identify the risk factors of renal failure. This study revealed that 15% of cases and 6% of controls used alternative medication (ayurvedic and herbal) with Odds ratio 2.765 (95% CI.026, 7.45).These results are quite consistent with the findings of our study in which alternative medication (hakim,herbal and homeopathic) has come out to be associated with renal failure among diabetics. Diabetes itself is responsible for nephropathies, thus if diabetic patient indulges in alternative medication the risk of renal failure augments.

A Nigerian retrospective cohort study on 150 cases and 300 controls revealed that there were more cases (10.7%) with diabetes mellitus, compared to controls (2.7%) (P = 0.001). Similarly more cases 86.7% gave history of alternative medication (herbal) as compared to controls (42%). Thus this study established a strong association of diabetes, use of alternative medication with renal failure.[9]

[V] CONCLUSION:

In Pakistan the prevalence of diabetics and use of complementary medicine is quite high[6] but we lack standardized data and researches in this regard. A patient with renal failure has compromised quality of life[10] with extensive financial burden both on family and country[11], therefore the best cost effective strategy is to increase awareness among diabetics to maintain strict glycemic control through recommended treatment regimens and to have a cautious health seeking behavior avoiding alternative medications.

FINANCIAL DISCLOSURE

No funding received for this research.

CONFLICT OF INTEREST

None identified.

RESULTS

TABLE #1: Age, Gender and Duration of Diabetes of Cases and Controls

		Cases		Controls	
		Frequency	%	Frequency	%
Age Groups	40-55yrs	20	20	36	36
	56-70yrs	72	72	62	62
	71-85yrs	8	8	2	2
Mean Age (years)		61.27		57.41	
Std.Deviation		7.30		7.10	
Gender	Male	62	62	43	43
	female	38	38	57	57
Durationof Diabetes	5-15 yrs	63	63	79	79
	16-30 yrs	37	37	21	21
Mean duration (years)		14.8		12.3	
Std.deviation		4.7		5.4	

Table # 2 Association of Alternative Medication and Renal Failure among Cases and Controls

		Cases	Controls	Total
Hakim Medication used	Yes	25	14	39
	No	75	86	161
Total		100	100	200
P-Value	P=0.050*			
Odds ratio	OR= 2.048 95% CI (1.00, 4.22)			
Use of Herbal Medication	Yes	10	4	14
	No	90	96	186
Total		100	100	200
P-Value	P= 0.096			
Odds ratio	OR= 2.667 95% CI (0.81, 8.80)			
Use of Homeopathic Medication	Yes	19	6	25
	No	81	94	175
Total		100	100	200
P-value	P= 0.005**			
Odds ratio	OR= 3.675 95% CI (1.40, 9.64)			

*P -value of less than 0.05 is statistically significant

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