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Effects of Medicine and Yogasanas on Biochemical and Physiological Parameters in Hypertensive and Diabetic Patients :Comparative Study

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ABSTRACT: A comparative study of drugs and yoga was conducted to observe the effect on various biochemical and physiological parameters in hypertensive and diabetic patients. 320 patients of different category were selected in IAI, JA2, 18 and 2A1, 242 and 2B as hypertension and diabetes respectively. The effects of drugs and yoga asanas on blood pressure, blood glucose and lipid levels were studied separately as well as in combination. It was found that in patients newly diagnosed with blood pressure and diabetes mellitus, the effect of both medicine and Yogasana is quite similar, whereas in patients who are already taking drugs, the dose is reduced, provided Yogasana is practiced along with the medicines. Should also be done together. Hence it is concluded that yogasanas should be recommended to patients with newly diagnosed hypertension and diabetes as well as to patients who are already taking medication for the disease as they do not cause side effects and are also less expensive.

I.INTRODUCTION

As a result of progress of civilization, stress and tension is increasing in our society and too much stress is causing diseases e.g. Hypertension and Diabetes A large number of drugs are being used at an alarming rate but their use is associated with number of side effects and they are highly costly. Yogasanas are traditionally practiced in our society and are claimed to be effective in various conditions. So the present study can be considered to find out any scientific effectiveness of Yogasana as compared to drugs and if found effective, then it is a better option for the treatment of stress induced disease.

II.MATERIAL AND METHOD

Different group of patients suffering from hypertension and diabetes were selected. Vindhya Bharti out of 320 patients suffering from blood pressure and diabetes were selected and divided into two groups, group 1 (hypertensive patients) and group 2 (diabetic patients). Those were further divided into 1A1, TA2, and IB and subgroups 2A1, 2A2, and 28 .

Group 1A1 and 2A1 was a newly diagnosed case of hypertension and diabetes respectively and was given medicines only.

Groups 1A2 and 2A2 were advised to exercise only.

Medicines were given to various prescribed Yogasana groups 18 and 28 along with advice to do Yogasanas in both the categories.

Vajrasana, Dhanurvakrasana, Yogasana Bhujangasana, various Paschimottasana, Shalabhasana and Shavasana were recommended. The drug used was atenolol, an ACE inhibitor, a calcium channel blocker drug.

III.OBSERVATION AND RESULTS

It was observed that patients who were receiving medication for the treatment of mild hypertension and diabetes responded almost as fast as patients who practiced yoga for mild hypertension and diabetes. There was no statistical significance in their response (Table No. 1 to 8) .

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Table 1. Age and gender distribution of hypertensive patients

age	1A1		1A2		1B		Total	
	Male	Woman	Male	Woman	Male	Woman	Male	Woman
30-40	07	02	07	03	08	03	22	08
40-50	13	08	13	07	20	07	46	22
51-60	18	03	17	02	14	06	49	11
Total	38	13	37	12	42	16	117	41
Grand Total	51		49		58		158	

**Table 2 - Age and Sex Distribution and Drug Response in Hypertensive Patients
[1-A1] 1-A1 (high blood pressure)**

	Male	Woman	Total	good	fair	Non responder
30-40	07	03	10	8 (10%)	1 (10%)	1 (10%)
40-50	13	07	20	15(75%)	3 (15%)	02(10%)
51-60	18	03	21	17 (80%)	4 (19%)	0(0%)
Total	38	13	51	40(78%)	8 (15%)	3 (5%)
Overall response	94%					

**Table 3- Age of Yogasana and Gender distribution and response on hypertensive patients. Subgroup [1-A2] 1 A2
(hypertension)**

	Male	Woman	Total	good	fair	Non responder
30-40	07	03	10	5 (10%)	2 (4%)	03 (6%)
40-50	12	07	19	10(20%)	7 (14%)	02(4%)
51-60	17	03	20	9 (18%)	8 (16%)	03(6%)
Total	36	13	49	24(48%)	17 (34%)	08 (16%)
Overall response	83%					

**Table 4- Medicines and age and gender distribution of yogasanas on hypertensive patients and feedback .
[18] 1b (hypertension)**

	Male	Woman	Total	good	fair	Non responder
30-40	08	03	11	4 (10%)	04 (4%)	03 (5%)
40-50	20	07	17	12(20%)	09 (14%)	06(10%)
51-60	14	06	20	8 (18%)	06(16%)	06(10%)
Total	36	13	49	24(41%)	19 (32%)	15 (25%)
Overall response	73%					

Table-5 Disease age and sex distribution of diabetic patients

age	2 A - 1		2 A - 2		2- B		Total	
	Male	Woman	Male	Woman	Male	Woman	Male	Woman
30-40	03	01	03	03	04	01	10	05
40-50	09	03	08	03	12	03	29	09
51-60	21	10	21	09	16	03	58	22
Total	33	14	32	15	32	07	97	26
grand total	47		47		39		133	

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Table- 6 Age and sex distribution and response to drugs in diabetic patients

Subgroup [2-A1] 2 - A1(diabetes)

	Male	Woman	Total	good	fair	Non responder
30-40	03	01	04	3 (6%)	01 (2%)	Nil
40-50	09	03	12	6(12%)	03 (6%)	03(6%)
51-60	21	10	31	14 (20%)	06(12%)	11(23%)
Total	33	14	47	23(48%)	10 (21%)	14 (21%)
Overall response	61 %					

Table -7 Age and sex distribution and response of yogasana in diabetic patients.

Sub-group [2-A2] 2-A2 (Diabetes)

	Men	female	Total	Good	Fair	Non Responder
30-40	03	03	06	1 (2%)	Nil	05 (10%)
40-50	08	03	11	5(10%)	02 (4%)	04(8%)
51-60	21	09	30	13 (27%)	08(17%)	09(10%)
Total	32	15	47	19(40%)	10 (21%)	18 (38%)
Overall response	61 %					

Table - 8 Age and sex distribution in diabetic group and response to drugs and yogasanas .

Subgroup [2-B] 2-B (Diabetes)

	Male	Woman	Total	good	fair	Non responder
30-40	04	01	05	3 (7%)	1 (2%)	01 (2%)
40-50	12	03	15	5(12%)	04 (10%)	06(15%)
51-60	16	03	19	8 (21%)	05(12%)	06(115%)
Total	32	07	39	16(41%)	10 (25%)	13 (33%)
Overall response	66 %					

Patients who were suffering from chronic hypertension and diabetes mellitus and were taking medicines and if they practiced yogasanas together, it was observed that there was a reduction of about 50% increase in the dose of medicines.

It is also observed that the incidence of side effects was statistically significantly less in the patients who practiced yoga as compared to the drug group. (Table No. 9 and 10)

Table 9 Comparison of overall responses, side effects, and costs of therapy in hypertensive patients therapy

sub group	Over all response	Percentage	Side effect	Percentage	Cost of therapy
1-A1	48	94%	12	26%	Rs. 330/-
1-A2	41	83%	03	08%	Nil
1B	43	74%	05	12%	Rs. > 330/-

Table 10 Comparison of Overall Responses, Side Effects and Cost of Therapy in Diabetic Patients

sub group	Over all response	Percentage	side effects	Percentage	Cost of therapy
2-A1	33	70%	09	28%	Rs. 240/-
2-A2	29	61%	01	06%	Nil
2B	26	66%	02	08%	Rs.> 240/-

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IV.DISCUSSION

It is a well known fact that drugs used for high blood pressure and diabetes act by different mechanisms. In case of high blood pressure they act by blocking the B receptor, which leads to vasodilation and reduced sympathetic discharge from the brain. goes. Whereas anti-diabetic drug acts by increasing insulin release/better utilization of glucose etc. Both the groups have to use for a long time which causes a huge financial burden on the patient along with a large number of side effects and resistance to the drug.

Yogasana is well known to our ancient literature and has been practiced since ancient times. It has been found that in hypertensive patients, continuous practice of yoga poses leads to a decrease in sympathetic activity and the release of neurotransmitters from the brain e.g. Adrenaline, non-adrenaline, dopamine. Similarly, yoga poses also reduce the sugar level as they facilitate insulin release from the pancreas and lead to better sugar control. Decreasing sympathetic activity is also helpful for the same action.

V.CONCLUSION

Considering the overall effectiveness and cost of therapy it can be concluded that Yogasanas are definitely effective in controlling blood pressure and diabetes as well as reducing the dosage of drugs used in these diseases And there are yogasanas as well. Does not cause any side effects and economically.

Hence it is concluded that yogasanas can be recommended to all patients who are either newly diagnosed as hypertension or diabetes or to all patients who are already receiving anti-hypertension or anti-diabetic medication. have been

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