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Immediate Effect Of Abdominal Heating Compress On Blood Pressure And Pulse Rate In Hypertensive Patients

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ABSTRACT: Background: An elevated blood pressure level is called hypertension, and it has a global impact on the burden and mortality of cardiovascular disease. The force inside the body's major arteries is known as blood pressure, and it is frequently measured in both diastolic and systolic forms. **Materials and Methods:**The investigation was carried out at the Sree Ramakrishna Medical College of Naturopathy and Yogic Sciences and Hospital in Kulasekharam, Tamil Nadu, India. 20 hypertensive people took part in the research. After the goal of the study was explained, verbal consent was obtained. One of the characteristics of this investigation is the blood pressure measured using a sphygmomanometer both before and after the intervention. statistical analysis and result interpretation using JASP software version 0.19.3.**Results:**The data analysis was conducted using JASP software version 0.19.3. It is clear that naturopathic treatments significantly lessen the symptoms associated with systolic blood pressure (t -23.637, Sig 2tailed. < 0.001)

and diastolic blood pressure dropped (t -28.185, sig 2tailed. < 0.001). The pulse rate dropped (t-12.348, sig 2 tailed < 0.001). **Conclusion:** Given the benefits of naturopathic biotherapies, it would be prudent to add them to conventional treatment regimens to help manage the symptoms of hypertension and reduce the side effects of pharmaceutical use. The goal of naturopathy is to reduce the root cause of hypertension in order to prevent and treat it. The noteworthy outcome shows that using an abdominal heating compress helps to regulate blood pressure and lowers the amount of stress we encounter on a daily basis.

Keywords: Hypertension, Abdominal heating compress, Pulse rate, Blood pressure.

INTRODUCTION

When blood pressure is excessively high, it is called hypertension. Blood pressure is the force that the blood in circulation exerts on the artery walls. Globally, hypertension is a risk factor for the burden and mortality of cardiovascular disease.In the majority of the world's areas, high blood pressure is the main cause of the burden of cardiovascular disease. The metabolic syndrome, which includes obesity, type 2 diabetes, and dyslipidemia, frequently coexists with hypertension.In India, hypertension affects roughly 22.6 percent of people overall, with men more likely than women to have it[1].A type of physical treatment called hydrotherapy involves applying water to the body in a number of ways, both internally and externally. Hydrotherapy includes topical applications of hot or cold water packs, compresses, baths, pools, steams, showers, and enemas[2].Giving hydrotherapy to older patients is one way to try to decrease or regulate their blood pressure. The only treatment that can help, cure, treat, or lower blood pressure is hydrotherapy. The treatment's objective is to demonstrate a decrease in both blood pressure and pulse rate.

MATERIALS AND METHODS

STUDY DESIGN

Case study→Pre assessment →Naturopathic Intervention→Post assessment → Statistical analysis by JASP software and interpretation of results.

SETTING

The study was conducted at the Sree Ramakrishna Medical College Hospital for Naturopathy and Yoga , India.

STUDY PARTICIPANTS

Twenty patients who were diagnosed with hypertension and were enrolled in the Sree Ramakrishna Medical College Hospital for Naturopathy and Yoga were conveniently sampled for the study. The investigation was carried out for 30 minutes in the morning, two hours after breakfast, for each sample. Professionals with training in naturopathy administered the intervention. Every participant had

hypertension (blood pressure greater than 140/90 mmHg) and no other illnesses. All the patients gave their verbal consent.The SRKMCNYS Institutional Ethics Committee gave their approval to the project.

INCLUSION CRITERIA

- The study participants were selected between the age group of 30 to 50yrs.
- Hypertension patients with systolic blood pressure of 140-160mmHg and Diastolic blood pressure is 90-100mmHg.
- Does not develop cold intolerance.
- Willing to participate in the study.
- Participants are well conscious.
- Study participants who were unwilling or obstinate were not allowed to participate.

EXCLUSION CRITERIA

- Subjects with secondary hypertension,valvular disease,coronary artery bypass grafting.
- History of stroke
- Abnormal thyroid function
- Female subjects during menstruation
- Pregnant women
- Invasive surgery has been done.
- Patients taking any hypertension medications and pain medication.
- Any heart diseases, peripheral arterial circulation disorders, sensory disorders.

TOOLS

A sphygmomanometer was used to measure blood pressure by auscultation of the brachial artery both before and after the intervention. An appropriately sized compress made of eight thicknesses of delicate cheese cloth squeezed from cold water (60^0 F). The temperature of the water is monitored using a digital water thermometer. Using the Pulse Oxymeter BPL, pulse values are captured. Statistical analysis and result interpretation using JASP 0.19.3 software.

TREATMENT PROTOCOL

NATUROPATHIC INTERVENTION

The abdominal Heating Compress, a hydrotherapic technique, patients are made to lie down on cots. The front of the trunk, between the sternum and the pubis, is compressed with a suitable size of eight-thickness soft cheese cloth that has been wrung out of cold water (60^0 F), and it is covered with a dry bandage that holds it in place[2]. After that, the waterproof and woolen coverings are put on. A digital water thermometer was used to track the water's temperature.

RESULTS

There are twenty hypertensive volunteers in the age range of 30 to 50. The JASP program version 0.19.3 was used to analyze the data. The results clearly show that applying an abdominal heating compress for 30 minutes decreased systolic blood pressure (t -23.637, sig 2tailed. < 0.001) and diastolic blood pressure (t -28.185, sig 2tailed. < 0.001). On the other hand, the pulse rate dropped (t-12.348, sig 2 tailed.< 0.001).

Abbreviations: {COV- Coefficient of variation, SEM- Standard error of mean, AOD- Average of Difference}

Table 1

Pre - systolic	Mean	N	Std.Deviation	SEM	Variance	COV
	151.7	20	6.967	1.558	48.537	0.046

Table 1 shows,the pre systolic descriptive analysis

Table 2

Post-systolic	Mean	N	Std.Deviation	SEM	Variance	COV
	137.2	20	7.578	1.695	57.432	0.055

Table 2 shows, the post systolic descriptive analysis

Table 3

Pre-diastolic	Mean	N	Std.Deviation	SEM	Variance	COV
	92.3	20	3.450	0.772	11.905	0.037

Table 3 shows, the pre diastolic descriptive analysis

Table 4

Post-diastolic	Mean	N	Std.Deviation	SEM	Variance	COV
	80.1	20	3.640	0.814	13.253	0.045

Table 4 shows, the post diastolic descriptive analysis

Table 5

Pre systolic- Post systolic	N	AOD	Std.Deviation of difference	t	df	P-Value
	20	-14.5	2.7434	-23.637	19	< 0.001

Table 5 shows, the pre systolic and post systolic t test

Table 6

Pre diastolic- Post diastolic	N	AOD	Std.Deviation of difference	t	df	P-Value
	20	-12.2	1.9358	-28.185	19	< 0.001

Table 6 shows, the pre diastolic and post diastolic t test

Table 7

Pre - Pulse rate	Mean	N	Std.Deviation	SEM	Variance	COV
	83.4	20	5.030	1.125	25.305	0.060

Table 7 shows,the Pre pulse rate descriptive analysis

Table 8

Post - Pulse rate	Mean	N	Std.Deviation	SEM	Variance	COV
	76.1	20	3.972	0.888	15.779	0.052

Table 8 shows,the Post pulse rate descriptive analysis

Table 9

PrePr-PostPr	N	AOD	Std.Deviation of difference	t	df	P-Value
	20	-7.3	1.8666	-17.4898	19	< 0.001

Table 9 shows,the Pre pulse rate and Post pulse rate descriptive analysis

DISCUSSION

Applying an abdominal heating compress while covered with a very thick flannel fabric will allow the compress to retain as much heat as possible[2]. Heating alters the ANS's balance and makes the sympathetic nervous system more active[6]. Intestinal activity and blood flow to the gut are decreased as a result of sympathetic activity, which increases blood flow to the heart[7]. However, the sympathetic nervous system speeds up the heart rate by releasing catecholamines, adrenaline, and norepinephrine[7].When the heart's blood supply increases, baroreceptors or mechanoreceptors, which are located in the blood vessels near the heart, provide information about blood volume and pressure.The nucleus tractus solitarius is stimulated more when the amount of strain on the vascular wall is detected, since this leads to a higher rate of impulse firing. By triggering the arterial baro reflex, also known as the Besold-Jarisch reflex, it plays a crucial part in regulating the autonomic efferent activity of the cardiovascular system. In order to return arterial blood pressure to normal, this will decrease the sympathetic drive to the heart and vessels and enhance the parasympathetic activity of the heart.[4,5] Acetylcholine is released simultaneously by the parasympathetic nervous system to lower heart rate[3].This study unequivocally shows that a slightly lower pulse rate is associated with lower blood pressure. The subjects experienced a sensation of well-being, calmness, and drowsiness after using the abdominal heating compress. This demonstrates how parasympathetic stimulation from an abdominal heating compress affects blood pressure. In our daily lives, abdominal heating compresses can be used to lower blood pressure since they have a significant tendency to balance or improve the autonomic nervous system through increased parasympathetic activation.

CONCLUSION

Given the benefits of naturopathic biotherapies, it would be prudent to add them to conventional treatment regimens to help manage the symptoms of hypertension and reduce the side effects of pharmaceutical use, in order to treat and prevent high blood pressure. Naturopathy aims to lessen the underlying cause. The noteworthy outcome demonstrated that using an abdomen-heating compress helps to regulate blood pressure and lowers the amount of stress we encounter on a daily basis.

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