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ORIGINAL ARTICLE

THE EFFECT OF NADI SODHAN PRANAYAM ON HYPERTENSION

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ABSTRACT:

The objective of present study is to assess the effect of nadishodhan pranayama on hypertension. This research is done by employing simple random sampling to select 30 patients from polyclinic department of Dev Sanskriti Vishwavidyalaya, Haridwar(Uttarakhand). The single group pre test-post test experiment was conducted for 30 days with nadishodhan pranayama regularly in the morning. After statistical analysis, the result reveals that the nadishodhan pranayama one of the best tool to manage the blood pressure. This concludes that the yogic practices(nadishodhan pranayama) provides the individual with refreshing experiences, and manage the hypertension to a great level and also the individual get rid of taking exhaustive colourful and toxic medicines.

KEY WORDS: Hypertension, Nadishodhan Pranayama

INTRODUCTION- Blood pressure is the force of blood against the wall of arteries.

Arterial blood pressure reflects two factors:

I. How much the elastic arteries close to the heart can be stretched and
II. The volume of blood forced into them at any time. If the amounts of blood entering and leaving the elastic arteries in a given period were equal, arterial pressure would be constant. Instead blood pressure rises and falls in a regular fashion in the elastic arteries near the heart, that is, it is obviously pulsatile.

At the left ventricle contracts and expels blood into the aorta,it imparts kinetic energy to the blood, which stretches theelastic aorta as aortic pressure reaches its peak .Indeed , if theaorta were opened during this period, blood would spurtupward 5 or 6 feet; this pressure peak called the systolic pressure, average 120 mm Hg in healthy adults. Blood movesforward into the arterial bed because the pressure in aorta ishigher than the pressure in the more distal vessels. Duringdiastole, the aortic semi lunar valve closes, preventing bloodfrom flowing back into the heart, and the walls of the aorta(andother elastic arteries) recoil, maintaining adequate pressure onthe reducing blood volume to keep the blood flowing forwardinto the smaller vessels. During this time, aortic pressure

drops to its lowest level(approximately 70 to 80 mm Hg in healthy adults), called the **diastolic pressure. (Marieb, N. E., 2006)**

Harmonal mechanism for renal control of blood pressure

Blood pressure varies from person to person and by ages. In general:

- Normal blood pressure is less than 130 mm Hg systolic and less than 85 mm Hg diastolic.
- Optimal blood pressure is less than 120 mm Hg systolic and less than 80 mm Hg diastolic.
- Hypertension is generally defined as a blood pressure greater than 140/90.

RANGE OF HYPERTENSION-

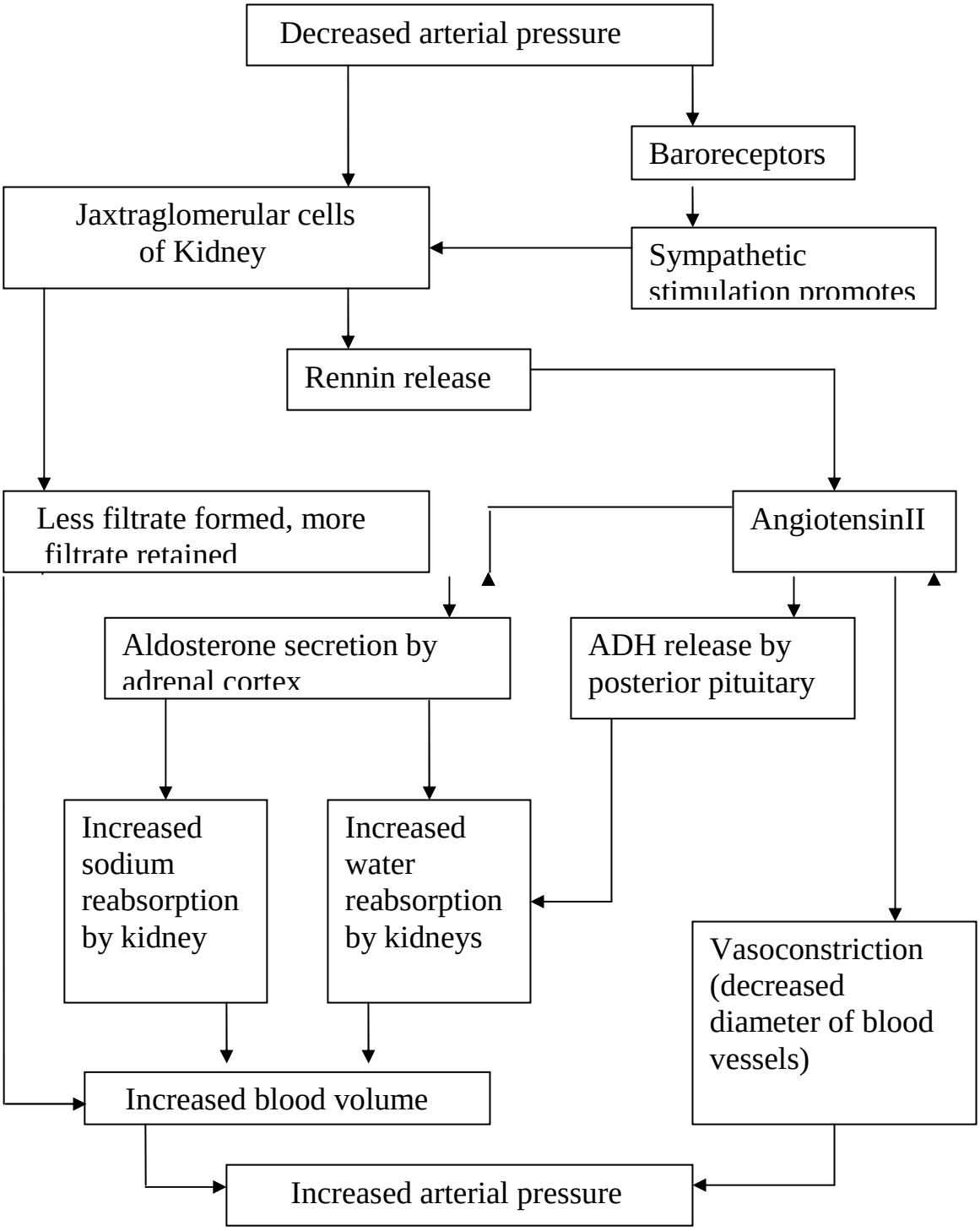
- At 50 years -140/90
- At 60 years -160/95
- At 70 years - 170/100

(**Ross & Willsons, 2004)**

Hypertension Survey Facts:

The National Council on Aging (**NCOA**) conducted a national survey of more than 1,500 Americans over the age of 50 to gauge the awareness of high blood pressure, including its risks and causes. This group is considered to be at great risk for complications from uncontrolled high blood pressure.

*46% of those surveyed incorrectly believed that the main cause of high blood pressure is stress.



HOW DOES STRESS INCREASE BLOOD PRESSURE:- Blood pressure is affected by emotions, such as fear oranger, but the effect tends to be short lived when a person leads a life that is full of tension, anxiety, worry etc. With continued excitation of the SNS, the by varies considerably within 24 hours of the day. Not surprisingly, it is at its lowest

in the middle of the might and at its peak at the end of the working day. Some of these changes are due to normal rhythms in the body's chemistry and some are related to stress and exercise. **(Nagarathan, R. &Nagendra, H. R., 2004)**

Psychological stresses which can occur independently or as reaction to the physical stresses .Example are, life situations that evoke emotional responses like fear, anxiety, tension worry jealousy, hearted, anger, excitement, conflicts etc. It may be a temporary stress, demanding only an immediate adaptation process or it may be along standing one, leaving deep-seated subconscious impressions leading to prolonged tension. **(Nagarathan, R. &Nagendra, H. R., 2004)**

Nadi Sodhan Pranayama- The Hatha Yoga Pradipika (II, 6-9, 19-20), Siva Samhita (III, 24,25), Gheranda Samhita (v, 49-52) and chudamani Upanisad (v, 98-100) describes a type of pranayama which cleanses the nadi. The texts mention the technique and describe its beneficial effects, specifically stating that they are due to cleansing of the nadis (nadi sodhan). Though all yoga texts describe various types of pran by theire titles, yet none mention the name of nadi sodhan pranayama.Nadi Sodhan is a singularly important pranayama. The word ***'nadi'*** means '***psychic passage'*** and ***'sodhan'*** means ***'to purify' ;*** therefore ***Nadi Sodhan is a practice where by the pranic channels are purified and decongested.*** It is practiced by alternating the inhalation and exhalation between left and right nostrils, thus influencing the ida/ pingala nadis, the controlling oscillations, of the body/mind network and bringing balance and harmony throughout the system.
It is truly a balancing pranayama, because whether the imbalance lies in the physical or mental bodies, nadi sodhana can be used to restore equilibrium. It is considered to be an excellent preparation for meditation techniques.

Hath Yoga advocates that one should perform the nadi sodhan pranayam before starting the main eight types of pranayama, as it will cleanse the nadis. The technique of nadi sodhan is also described in hatha yoga.

That's why I have chosen to see the Effect of Nadishodhan Pranayama on hypertension. And here null hypothesis is used:

1. There is no significant difference in the level of Systolic Blood Pressure due to one month practice of Nadishodhan Pranayama.
2. There is no significant difference in the level of Diastolic Blood Pressure due to one month practice of Nadishodhan Pranayama.

METHEDOLOGY-

i. **Research Design:** In the present study, the single group pre-test and post-test design was used.

ii. Sampling: The sample of 30 paitents of hypertension were taken for the present study from Polyclinic Department of Dev Sanskriti Vishwavidyalaya, Haridwar.The Simple Random sampling has been used for collecting the sample.

iii. Tool used: In the present study the **AneroidSphygmomanometer CEO483 (Home blood pressuremonitor**) and **Microtone stethoscope of PLOLIX company** was used.

INTRVENSION:

- "Sit in a comfortable asana.
- Make both body and breath as still and steady as possible.
- Place your left hand on your left knee, relaxed and raise the right hand to your face. Make the jyan mudra.
  - Begin purak through left nostril keeping the right nostril closed.
  - Than kumbhak (antrang) is maintained by keeping the both nostril closed.
  - Thereafter the rechak is performed through the right nostril keeping the left nostril closed.
  - In the next breath the whole process is reversed.
  - The purak is done through the right and after kumbhak with both nostril closed, the rechak is done through the left nostril.
- These two breaths together constitute the one round of nadi shodhan pranayam.
  - Always right hand is used to close the nostril. The thumb is used for the closure of the right nostril while the ring and the little finger are used for the closure of the left nostril. The fore finger and the middle finger are never used and are kept curled downward towards the palm.

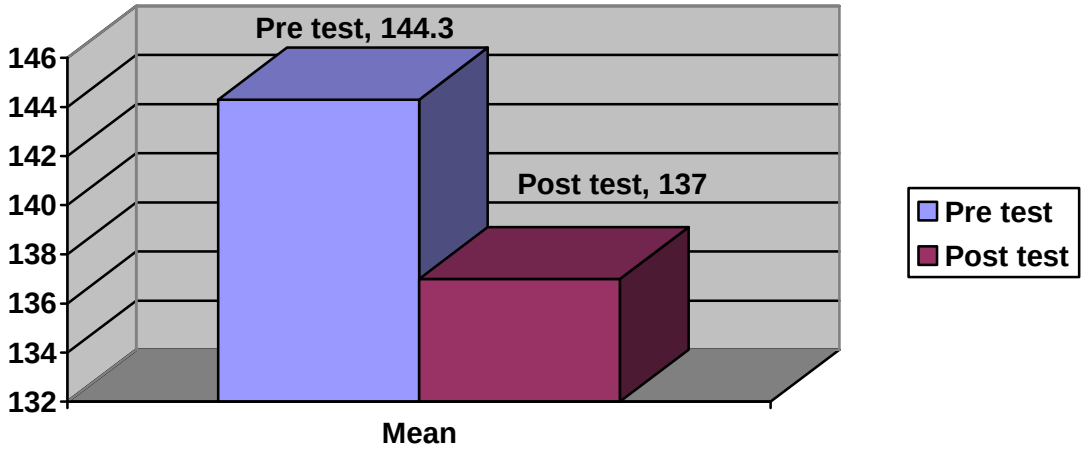
Statistical Analysis: t-test has been used for the results.

RESULT AND DISCUSSION:

TABLE-1

Observation	Mean	SD	r	SED	t	Significant level
Pre test	144.3	20	8.7	1.85	3.95	0.01
Post test	137	15098				

GRAPH-1 *For systolic blood pressure



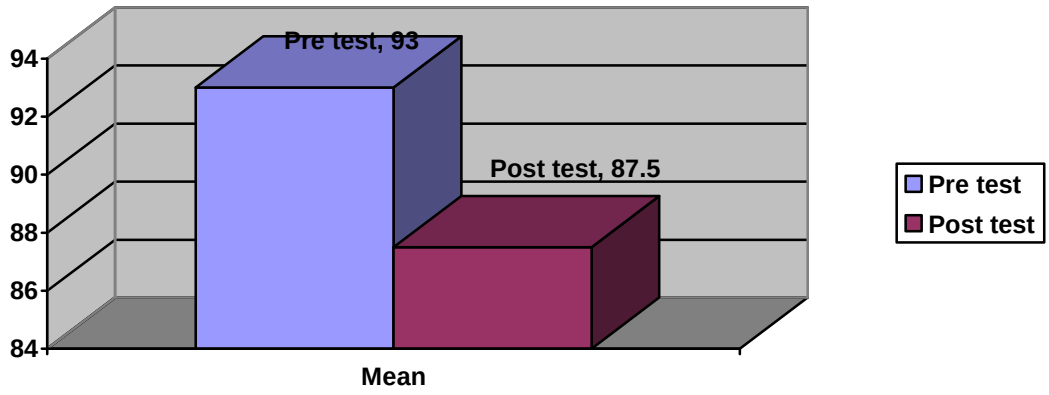
From table 1, mean value of pre test, m=144.3 & SD=20. After providing yoga package, the mean value of post test, m=137& SD=15.98 was found. There is some difference in between mean value of pre and post test & SD of pre and post test. After using' test obtained, t=3.95 for df=29 at p<0.01is greater than required' value=2.76. Therefore the null hypothesis has been rejected and the alternate hypothesis, "Nadishodhan Pranayama causes' significant difference on systolic blood pressure of the subjects has been accepted.

TABLE-2

GRAPH- 2

Observation	Mean	SD	r	SED	t	Significant level
Pre test	93	15.47	2.5	1.14	4.82	0.01
Post test	87.5	3.78				

*For diastolic blood pressure



From table 2, mean value of pre test, m=93 & SD=15.47. After providing yoga package, the mean value of post test, m=87.5 & SD=3.78 was found. There is some difference in between mean value

of pre and post test & SD of pre and post test. After using't' test obtained, t=4.82 for df=29 at p<0.01is greater than required't' value=2.76. Therefore the null hypothesis has been rejected and the alternate hypothesis, "Nadishodhan Pranayama causes' significant difference on diastolic blood pressure of the subjects" has been accepted.

The mean of post-test was greater than the mean of pre-test of the adolescent boys. Thus, the result is highly significant at 0.01 level: the result table indicates that the directional hypothesis viz, "there is a significant difference that the level of hypertension is reduced by the performing of Nadishodhan Pranayama. Following reaserches supports the fact that the regular practice of Nadishodhan Pranayama with consciousness and awareness effectively reduse the hypertension.

Nadishodhan pranayama is a useful technique to reduce elevated blood pressure and Hypertension. Nadishodhan pranayama shows significant effect on hypertensive patients. **(Uduppa, K.N., 1986)** This study shows that nadishodhan pranayama relaxes the body and mind. It is very effective technique for relaxing the mind. Mind and body are correlated with each other .So if the mind relaxes and tension freer then body also be relax and tensionless. If the muscles are relaxed then elevated blood pressure be reduces.

Thus we can say nadishodan pranayama is useful to reduce elevated/high blood pressure. Hypertension and anxiety can be relaxed easily from meditation. Meditation is more effective then relaxation technique. **(Broota, Verma and S., 1995)**

Yoga nidra and Nadishodhan Pranayama is a systematic method of including complete physical, mental and emotional relaxation**.**Yoga nidra is highly effective technique to reduce elevated (high) blood pressure.Shavasana also include in the yoga nidra practice.Nadishodhan Pranayama and Shavasana shows beneficial effect of in mild hypertensives who were not taking medication. **(Datey, et al., 1969)**

A study reported that shavashana shows a beneficial effect in hypertension in one year fallow-up control study. **(Patel, 1973)**

CONCLUSION-

Finally we conclude that the Nadi Shodan Pranayama, which include in this investigation is highly effective to reduce high blood pressure. Results of the study supports that the Nadishodhan Pranayama plays significant role in the reduction of hypertension . It is also being prooved that the regular practice of Nadishodhan Pranayama purify all the Nadis and immunized the whole body and not only help to combat the hypertension but also the other malfunction of the body.

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