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Assess the effectiveness of buerger allen exercise to reduce pedal edema among the adults with varicose veins at Saveetha medical college and hospital.

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Abstract

Varicose veins are the veins that have become enlarged and twisted. It happens when valves in the veins no longer functions adequately which causes valvular incompetence. Prolonged venous insufficiency may cause edema in legs, ankles and also in feet .The aim of the study is to assess the effectiveness of Buerger Allen exercise to reduce pedal edema among the adults with varicose veins at Saveetha Medical College and Hospital. A quantitative research design was adopted with Purposive sampling technique to select 60 adults having pedal edema at Saveetha Medical College and Hospital. Pre test and post test were done using edema scale, demographic variable were collected by structured questionnaire and the Buerger Allen Exercise was performed twice a day for 10 days. The data was collected, organized and analyzed in term of descriptive statistics .The study findings revealed that the pre test mean value is 1.9. After practising Buerger Allen Exercise post test mean value is 0.7. The paired't' test value was 16.1554 which was greater than table value (2.05).The chi square value of age group among patients with varicose veins were associated 37.48 and df= 8 which is not significant at $p<0.05$ level and other demographic variable gender, BMI, type of work, duration of standing hours and use of stockings where significant at $p<0.05$ level. The majority of the adults with varicose veins having pedal edema had shown significant reduction in pedal edema through Buerger Allen Exercise.

Keywords: Varicose Veins, Pedal Edema, Buerger Allen Exercise.

INTRODUCTION:

Veins are blood vessels that carry blood toward the heart. Most veins carry deoxygenated blood from the tissues back to the heart; exceptions are the pulmonary and umbilical veins, both of which carry oxygenated blood to the heart. Veins also act as storage for unused blood. This storing capacity is due to the elasticity (flexibility to expand) of the walls of the veins. They are less muscular than arteries and are often closer to the skin. There are valves in most veins to prevent backflow[1]. Varicose veins, also known as varicose or varicosities, where veins become enlarged, dilated, and overfilled with blood. Varicose veins typically appear swollen and raised, and have a bluish-purple or red color. It happens when valves in the veins no longer functions adequately (valvular incompetence).[2]

Buerger Allen Exercises are effective among varicose vein patients. Exercise training helps the varicose vein patients in potential mechanisms like formation of collateral circulation and increased blood flow; Exercises used to empty engorged vessels, stimulate circulation, and at least partially relieve swelling (edema) in patients with arterial insufficiency of the lower limbs and feet[3-5].

Chyong Fang Chang. (2015) conducted a study on effect of Buerger Allen Exercise in improving peripheral circulation Findings provide some evidence of the beneficial effects of Buerger's exercises. It was seen as a low cost and low risk physical activity that most diabetic patients could undertake at home[9].

Buerger allen Exercise is one of the intervention to stimulate the development of collateral circulation in the legs. Primary Care Providers should focus on prevention by early recognition and prevention of PAD to those at increased risk. An awareness of diagnostic and treatment strategies will enable primary care providers to educate patients. This will help to improve both concordance with treatment and disease outcome. Considering the above factors and review of literature, the investigator felt that all diabetes mellitus and Hypertension patients should do the Buerger Allen exercise to improve lower extremity perfusion. Though there is high prevalence rate (35%) of PAD in India, very few studies have been conducted in India. Researcher personally observed during clinical experience that many patients with vascular disease are admitted to the hospital with pedal edema. The investigator found that the patients were not having adequate knowledge regarding disease condition and its preventive measures. Thus the investigator felt the need to educate and implement Buerger Allen Exercise for the patients to reduce pedal edema[6-8].

METHODOLOGY:

The Quantitative approach with Pre experimental research design (One group pre test and post test design) was used to assess the effectiveness of Buerger Allen exercise to reduce pedal edema among the adults with varicose veins at Saveetha Medical College and Hospital **,**the participants with varicose veins having pedal edema who were admitted in saveetha medical college and Hospital and who met the inclusion criteria were selected by using purposive sampling technique. Sample size was 60. The Inclusion criteria of the study was Patients who had varicose veins with pedal edema, Both the sexes of male and female aged between 30-60 years and those who were willing to participate. Adults who already undergone vascular surgery have been excluded from the study. It consists of demographic variable like age, sex, duration of varicose

veins, stage of varicose veins and edema score. The participants were given Buerger Allen exercise as following Step 1-elevation; the lower extremities are elevated in 45 to 90 degree angle and supported in this position for 2-3 minutes until skin blanches. Step 2-dependency, the feet and leg are then lowered below the level of rest until the redness appears (care should be taken that there is no pressure against knees) for 3-5 minutes. In this patient is seated, where the legs are below the level of rest. Step 3-horizontal, Legs are placed flat in a supine position and the exercise lasts for 3-5 minutes. The length of time for each position depends upon patient tolerance. It's prescribed for 12-13 minutes for frequency of two times per day. The data were analyzed by using descriptive statistics. The project has been approved by the ethical committee of the institution. Informed consent was obtained from the participants before initiating the study.

RESULTS:

The pre test mean value is 1.9. After practicing Buerger Allen Exercise post test mean value is 0.7. the paired 't' test value was 16.1554 which was greater than table value (2.05) this shows that Buerger Allen Exercise is effective in reducing pedal edema in adults with varicose vein.

Table:1 Comparison of Pre Test and Post Test score of Pedal Edema among Adults with Varicose Veins. N=30.

S.No	Edema score	Mean	Standard deviation	Mean difference	Paired t test
1	Pre test score	1.9	0.8448	1.2	16.1554*
2	Post test score	0.7	0.7943		

NOTE-* statistically significant

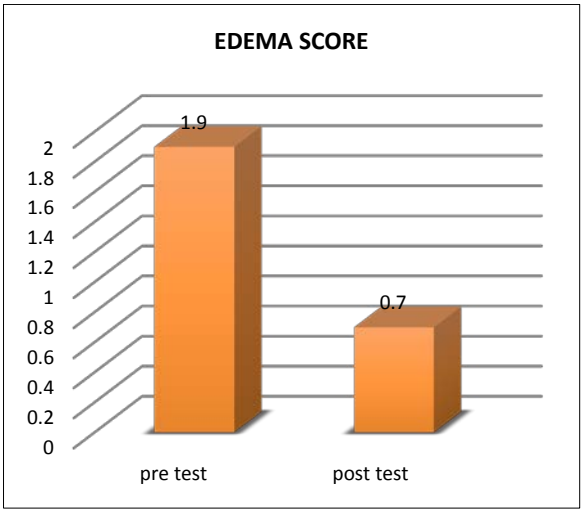

Figure 1 Comparison of Pre Test and Post Test Score of Pedal Edema among Adults with Varicose Veins

DISCUSSION:

The present findings reveal that pre test mean value is 1.9 after practising Buerger Allen Exercise the post test mean value is 0.7 the paired't' test value was 16.1554 which was greater than table value (2.05). The present study results revealed that age group among patients with varicose veins were associated 37.48 and df= 8 which is not significant at $p<0.05$ level and other demographic variable gender, BMI, type of work, duration of standing hours and use of stockings where significant at $p<0.05$ level. The present study is supported by Pranitha **(2010)** conducted a study to determine the effectiveness of Buerger Allen Exercise on lower extremity perfusion. The chi-square value showed that there was no association between pre-test peripheral perfusion with selected variables such as age, education, BMI and dietary pattern at $p<0.05$[10]. This study was also supported by **Nisha Ghimire (2013)** conducted a study to determine the effectiveness of Buerger Allen exercises in improving peripheral perfusion among Type II diabetes mellitus patients admitted in selected hospitals at Mangalore. The study results shows that chi-square value of occupation, type of work are statistically significant at $p<0.05$[11].

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Conflict of interest:

The Authors declare no conflict of interest.

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