**ORIGINAL ARTICLE**

# Frequency of Chronic Venous Insufficiency in Obese and Non-Obese patients

MALIK MUHAMMAD QASIM[1], ALTAF HUSSAIN[2], JAHANGIR ZAIB[3], *MUDASER HUSSAIN ABBASI*[4] *MUZZAMIL LIAQUAT ALI*[5]

## ABSTRACT

**Aim:** To determine the prevalence of chronic venous insufficiency in Obese and non-obese patients.
**Study design:** Observational descriptive study
**Place of study:** Study was organized in the department of dermatology Unit II, Mayo hospital, Lahore.
**Duration of study:** Six months and study data were collected from the 21st April 2009 to October 2009.
**Methods:** Out of 600 patients 300 obese and 300 non-obese patients were selected for this study. Detailed history was taken and thorough clinical examination and relevant investigations were performed.
**Results:** Chronic Venous Insufficiency was the most commonly seen in obese group 58(19.3%) as compared to 10(3.3%) non-obese group.
**Conclusion**: prevalence of chronic venous insufficency is more common in obese patients as compared to non-obese patients.
**Keywords:** Obese patients, non obese, chronic venous insufficiency

## INTRODUCTION

The word chronic venous insufficiency (CVI) illustrate a condition that affects the venous system of the lower extremities with venous high blood pressure inflicting numerous pathologies together with pain, swelling, edema, skin changes, and ulcerations. Although the term CVI is typically accustomed exclude uncomplicated varicose veins, varicose veins have incompetent valves with accumulated venous pressure resulting in progressive dilation and tortuosity[1]. Several risk factors have been related to the development of venous insufficiency like blubber, age, lifestyle, type of work, diet, hormone use, pregnancy, family history and others[2,3,4]. Obesity has been increasing in epidemic proportions in each adults and kids[5,6]. In mature age person, overweight is elucidated as a body mass index (BMI) twenty five to twenty nine.9 kg/m2 and blubber as BMI ≥30 kg/m2[7] Obesity is a major public pathological state altogether industrialized and developed countries. In these countries, it is approximated that 1/3 of the populace has severe obesity, that requires treatment so as to stop the development of diseases and complications like arterial high blood pressure (AH), diabetes mellitus (DM), respiratory distress, chronic venous diseases with ulceration of the lower limbs, among others[8]. Obesity is associated with a considerable reduction in lifespan. Recent data from the United States recommend that a severe level of blubber (BMI>45) throughout early adulthood (aged 20–30 years) might cut back a man's lifespan by up to thirteen years and a woman's by up to eight years[9]. Pakistan stratified ninth out of 188 countries in terms of blubber, according to the worldwide Burden of Disease Study and no country has turned the tide of blubber since 1980[10]. With a rising incidence of fatness all over the globe, few regional studies are conducted concerning connective tissue manifestations of blubber. Restricted work has been done on this subject in our part of the world. This study adds to presently accessible literature from Pakistan therefore this study planned and aimed to see the frequency of malady of the skin in obese and non-obese patients.

## MATERIALS AND METHODS

This Study was organized in the department of dermatology Unit II, Mayo hospital, Lahore. Data were collected from the twenty first Gregorian calendar month 2009 to October 2009. Sampling technique was Non-probability purposive sampling. Inclusion criteria include Obese and non-obese patients of either sex together with all ages will participate within the study when obtaining consent and people who refused to participate in the study

[1]*MO, Department of Dermatology, Mayo Hospital Lahore,*
[2]*Senior Registrar, Cardiology, Avicenna Medical College, Lahore.*
[3]*Assistant Professor Department of Medicine Poonch Medical College, Rawlakot.*
[4]*Associate Professor Forensic Medicine & Toxicology, Poonch Medical College, Rawlakot.*
[5]*Senior Lecturer, Biochemistry Avicenna Medical College, Lahore*
*Correspondence to Dr. Malik Muhammad Qasim Email: qasim_kem@yahoo.com*

were excluded from the study. Exclusion criteria include any sort of topical medical aid taken throughout the last fifteen days and any general treatment throughout the last one month. Three hundred fat and 300 non-obese patients were chosen from Department of medical specialty. Unit II, Mayo Hospital Lahore. Prior familiar written consent was taken from all the patients. Patient's weight and height was measured with the help of weighing machine and measurement tape appropriately and BMI was measured employing formula: Weight in kilograms/sq. of height in meters. Proforma was used for recording the findings on history and examination including height and weight of patients. Data was stratified for age to address impact modifiers. All the calculations were done on SPSS (statistical package for social sciences) version 20 and analyzed consequently.

## RESULTS

Table 1: Age wise distribution of Obese and Non Obese Patients

| Obese Pts (Years) | No. | Non-Obese Pts (Years) | No. |
|---|---|---|---|
| 1-10 | 0 | 1-10 | 12(4%) |
| 11-20 | 32(10.7%) | 11-20 | 78(26%) |
| 21-30 | 72(24%) | 21-30 | 94(31.3%) |
| 31-40 | 99(33%) | 31-40 | 43(14.3%) |
| 41-50 | 53(17.7%) | 41-50 | 38(12.7%) |
| 51-60 | 33(11%) | 51-60 | 23(7.7%) |
| 61-70 | 7(2.3%) | 61-70 | 10(3.3%) |
| 71-80 | 4(1.3%) | 71-80 | 2(0.7%) |

Out of 600 patients 332 males and 268 females were selected for the study showed in Table-2. In Obese group the most common patients were females 161(53.7%) as compared to males 139(46.3%).In Non-Obese patients the most common males 193(64.3%) followed by females 107(35.7%). Table-1 showed that in Obese patients the most common age group was 31-40yrs,99(33%) and second most common age group was 21-30yrs,72(24%) and third common age group was 41-50yrs 53(17.7%) found. In Non-Obese patients the most common age group was 21-30yrs,94(31.3%) and the second most common age group was 11-20yrs,78(26%) and third common age group 31-40yrs,43(14.3%) were found. In Obese patients the mean age of patients was 37.4± 13.0 standard deviation. In Non-Obese patients the mean age was30.9± 15.6 of standard deviation.

Table-2 Gender variation in obese and non-obese group

| Gender | Obese group | Non obese group |
|---|---|---|
| Male | 139(46.3%) | 193(64.3%) |
| Female | 161(53.7%) | 107(35.7%) |
| Total | 300(100%) | 300(100%) |

Table 3: Frequency chronic Venous Insufficiency in obese and non-obese group

| Chronic Venous Insufficiency | Obese group | Non obese group |
|---|---|---|
| Yes | 58(19.3%) | 10(3.3%) |
| No | 142(47.3%) | 290(90.7%) |

Table 3 showed that Chronic Venous Insufficiency was the most commonly seen in obese group 58(19.3%) as compared to 10(3.3%) non-obese group. Remaining Obese patients 142(47.3%) and Non-Obese patients 290(90.7%) did not found any finding.

## DISCUSSION

Elevated body-mass index was associated with an augmented risk of heart failure, without proof of a threshold. This increased risk was evident in each sexes and was not restricted to persons with extreme obesity[11]. There are many plausible mechanisms for such an alliance. Increased body-mass index is a risk issue for hypertension[12] diabete[13,14] and dyslipidemia[15] all of which augment the risk of MI[16,17] an necessary antecedent of heart disease[18-20,21]. In addition, hypertension and diabetes mellitus severally increase the danger of heart disease[18-20,21,22]. Elevated body-mass index is allied with altered left ventricular remodeling[23,24,25,26,27] possibly owing to increased hemodynamic load[28,29] neurohormonal activation[30] and increased oxidative stress[31]. Pakistan demographic survey, conducted in 2002 showed that twenty eight.6% of young adult population in our country is rotund[28]. In our study the mean age of the patients in rotund cluster was 37.4±13.0 years and in non rotund cluster was thirty.9±15.6 years. Within the rotund cluster we tend to have an inclination to had forty six.3% male patients and fifty 3.7% female patients whereas in non rotund cluster, there have been sixty four.3 man patients and thirty five.7% female patients. Chronic Venous Insufficiency was the most ordinarily seen in fat cluster 58(19.3%) as compared to ten (3.3%) non-obese cluster. Remaining Obese patients 142(47.3%) and Non-Obese patients 290(90.7%) did not found any finding. In another study of 1614 patients with CVI showed the 28% fat and 14 July were non fat that is comparable with our study[32]. Since BMI seems to be a lot of in such patients and it might be a conducive issue towards chronic blood vessel insufficiency. The limitation of the present study was restricted solely empirical descriptive style. The better approach would be to follow up patients with CVD to visualize whether or not aggravation of the malady is a lot of pronounced in those that area unit overweight or fat. Another limitation is the indisputable fact that

Doppler ultrasound examination wasn't performed altogether patients.

## CONCLUSION

It is concluded that prevalence of Chronic venous insufficency is more common in obese patients as compared to non-obese patients.

## REFERENCES


1. Mary Bellis. History of Firearms; Retrieved on October 27, 2007, http://inventors.about.com/od/militaryhistoryinventions/a/firearms.htm
2. Historical Aspect, Retrieved on October 10, 2007, http://library.med.utah.edu/WebPath/TUTORIAL/GUNS/GUNHIST.html
3. Ragsdale BD. Gunshot wounds: a historical perspective. Milit Med 1984; 149:301-15.
4. Pekka Saukko, Bernard Knight Knights Forensic Pathology, 3rd edition page no.246
5. NG K Rao text book of Forensic Medicine & Toxicology,2nd edition 272
6. Mandal AK, Sanusi M. Penetrating chest wounds: 24 years experience. World J Surg 2001; 25: 1145-9.
7. Khurram Niaz, Irfan Ali Shujah Civilian perspective of firearm injuries in Bahawalpur JPMA Vol. 63, No.1, January 2013
8. Richard Shephered text book of Simpson's Forensic Medicine page.No.80
9. Mussarat Saleem Durrani, Shoukat Ali Khan, Riffat Masood. An Epidemiology of Firearm Injuries in District Quetta Pakistan Journal of Medical and Health Sciences Vol. 9, Issue 1, JAN – MAR 2015 Page No.216 *Website: www.pjmhsonline.com*
10. Azam Khan Khetran, Samina Rehman, Zahir Khan, Incidence of Deaths due to Gunshot Injuries at District Barkhan, Balochistan JLUMHS MAY-AUGUST 2012; Vol 11: No. 02 90
11. S SATISH KENCHAIAH , M.D., J ANEC. E VANS , D.S C .,Obesity and the risk Of Heart Failure Engl J Med, Vol. 347, No. 5 · August 1, 2002 · www.nejm.org
12. Stamler J. Epidemiologic findings on body mass and blood pressure in adults. Ann Epidemiol 1991;1:347-62.
13. Chan JM, Rimm EB, Colditz GA, Stampfer MJ, Willett WC. Obesity, fat distribution, and weight gain as risk factors for clinical diabetes in men. Diabetes Care 1994;17:961-9.
14. Colditz GA, Willett WC, Rotnitzky A, Manson JE. Weight gain as a risk factor for clinical diabetes mellitus in women. Ann Intern Med 1995; 122:481-6.
15. Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults. Bethesda, Md. National Heart, Lung, and Blood Institute, 1998. (NIH publication no. 98-4083.)
16. Kannel WB, McGee DL. Diabetes and glucose tolerance as risk factors for cardiovascular disease: the Framingham Study. Diabetes Care 1979;2:120-6.
17. Manson JE, Colditz GA, Stampfer MJ, et al. A prospective study of obesity and risk of coronary heart disease in women. N Engl J Med 1990;322:882-9.
18. Chen YT, Vaccarino V, Williams CS, Butler J, Berkman LF, Krumholz, HM. Risk factors for heart failure in the elderly: a prospective community based study. Am J Med 1999;106:605-12.
19. He J, Ogden LG, Bazzano LA, Vupputuri S, Loria C, Whelton PK. Risk factors for congestive heart failure in US men and women: NHANES I epidemiologic follow-up study. Arch Intern Med 2001;161:996-1002.
20. Wilhelmsen L, Rosengren A, Eriksson H, Lappas G. Heart failure in the general population of men — morbidity, risk factors, and prognosis. J Intern Med 2001;249:253-61.
21. Kannel WB, D'Agostino RB, Silbershatz H, Belanger AJ, Wilson PW, Levy D. Profile for estimating risk of heart failure. Arch Intern Med 1999; 159:1197-204.
22. Levy D, Larson MG, Vasan RS, Kannel WB, Ho KK. The progression from hypertension to congestive heart failure. JAMA 1996;275:1557-62.
23. Messerli FH, Sundgaard-Riise K, Reisin ED, et al. Dimorphic cardiac adaptation to obesity and arterial hypertension. Ann Intern Med 1983;99: 757-61.
24. Hammond IW, Devereux RB, Alderman MH, Laragh JH. Relation of blood pressure and body build to left ventricular mass in normotensive and hypertensive employed adults. J Am Coll Cardiol 1988;12:996-1004.
25. Lauer MS, Anderson KM, Kannel WB, Levy D. The impact of obesity on left ventricular mass and geometry: the Framingham Heart Study. JAMA 1991;266:231-6.
26. Alpert MA, Lambert CR, Terry BE, et al. Influence of left ventricular mass on left ventricular diastolic filling in normotensive morbid obesity. Am Heart J 1995;130:1068-73.
27. Gardin JM, McClelland R, Kitzman D, et al. M-mode echocardiographic predictors of six- to seven-year incidence of coronary heart disease, stroke, congestive heart failure, and mortality in an elderly cohort (the Cardiovascular Health Study). Am J Cardiol 2001;87:1051-7.
28. Alexander JK, Dennis EW, Smith WG, Amad KH, Duncan WC, Austin RC. Blood volume, cardiac output, and distribution of systemic blood flow in extreme obesity. Cardiovasc Res Cent Bull 1963;1:39-44.
29. Messerli FH, Sundgaard-Riise K, Reisin E, Dreslinski G, Dunn FG, Frohlich E. Disparate cardiovascular effects of obesity and arterial hypertension. Am J Med 1983;74:808-12.
30. Engeli S, Sharma AM. The renin-angiotensin system and natriuretic peptides in obesity-associated hypertension. J Mol Med 2001;79:21-9.
31. Vincent HK, Powers SK, Stewart DJ, Shanely RA, Demirel H, Naito H. Obesity is associated with increased myocardial oxidative stress. Int J Obes Relat Metab Disord 1999;23:67-74.
32. Raju S,Darcey R,Neglen P.iliac caval stenting in the obese.J Vasc Surg 2009;50:1114-20.