EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 4
Issue: 12
392-396
Year: 2017

FAMILY HISTORY AS MAJOR PREDISPOSING FACTOR IN VARICOSE VEINS DISORDER

Shiksha Sharma[*1], Minakshi Vashist[1] and Madan Gopal Vashist[2]

[*1]Research Fellow, M.D. University, Rohtak, India.
[1]Professor, Department of Genetics, M.D. University, Rohtak, India.
[2]Senior Professor & Head, Department of Surgery, Pandit Bhagwat Dayal Sharma University of Health Sciences, Rohtak, Haryana, India.

***Corresponding Author: Dr. Shiksha Sharma**
Research Fellow, M.D. University, Rohtak, India.

Article Received on 23/09/2017 **Article Revised on 14/10/2017** **Article Accepted on 04/11/2017**

ABSTRACT
Varicose veins of lower extremities is a very frequent problem that affecting most of the men and women and children also. Several risk factors have been associated with the development of varicose veins, namely age, female sex, obesity, and possibly family history. Family history is proven to play an important role in the occurrence of varicose veins disease. In the present study role of family history in the patients of varicose veins has been analysed. Information regarding occurrence of varicose veins was collected from 216 patients and their family members. The data included, age of diagnosis, body mass index, occupation and family history of disease. Analysis of 216 patients revealed 132 patients with family history of varicose veins. In present study it was found that the occurrence of varicose veins was more frequent in patients with a positive family history mainly paternal influence. Out of above mentioned 132 patients, 68 patients had two person from their family affected with varicose veins and 53 patients had more than 3 persons affected with varicose veins. Adjusted OR was 6.375 (95% CI: 0.7508-54.126) in male and 0.319 (95% CI: 0.0319-3.181) in female. Evaluation of patients of varicose veins and their family members revealed, family history as an important major risk factor in occurrence of varicose veins. The information may improve the knowledge of people regarding varicose veins and to take preventive measures in advance.

KEYWORDS: Family history, Risk factor and varicose veins.

1. INTRODUCTION
Varicose veins, also known as varicose or varicosities, occur when veins become widen and overfilled with blood. Varicose veins typically appear swollen and raised, and have a bluish-purple or red color. They are often painful. Varicose veins is very common, especially in women. In India approximate 25 percent of all adults have varicose veins.[1] In most cases, varicose veins appear on the lower legs. In recent decades, there have been several epidemiologic studies of chronic venous disease, the majority focusing on the most common manifestation of varicose veins.[2,3,4,5] The cause of varicose veins is still incompletely understood despite the fact that varicose veins affecting all ages from teenagers to elderly people.

Several environmental risk factors have been found which are associated with the development of varicose veins, namely age, female sex, obesity, and possibly family history.[6] The most of the previous studies showed self reported positive family history as a risk factor for varicose veins.[7,8,9,10,11,12,13,14,15] In India 25% of patients had family history of close relatives suffering from varicose veins.[1] Having a family history of varicose veins was reported as a risk factor in the younger group (≤45 years old).[16] These studies suggest family history as a strong component in the primary venous failure. Understanding of the underlying causes of varicose veins is very important.

Identification of familial cause would be very useful in planning for the medical, educational and treatment need of a particular individual. Present study was done to know the familial associations with venous disease and to understand of the cause of varicose vein disease.

2. METHODOLOGY
Present study has been conducted on patients of varicose veins from Pandit Bhagwat Dayal Sharma University of Health Sciences, Rohtak, Haryana, India.

2.1 Sample size and collection of data
The study has been conducted on Two hundred sixteen patients of varicose veins and their family members after

Institutional Human Ethical Committee and Patient's consent. All the patients presenting with varicose veins of lower limb, who cleared the inclusion and exclusion criteria were selected for the present study.

2.2 Inclusion criteria

The patients of varicose veins who had attended the OPD of venous clinic of PGIMS, Rohtak were included in this study. All the patients were examined clinically confirmed by the clinicians and Color Doppler ultrasound.

2.3 Exclusion criteria

Patients who were not diagnosed with Color Dopler Ultrasonography were excluded from this study. Patients not willing to participate were also excluded from the study.

Detailed history of patients and family members was taken including, age of diagnosis, occupation of patients and family history. Clinical history was also taken with the help of clinician. Various risk factors in patients of varicose veins were statistically analysed. Family history of varicose veins was used as an indicator of genetic inheritance. This was elicited in close relatives including parents, grandparents and siblings. Family history was considered positive if at least one parent or sibling was affected. The questionnaire data and the data from the clinical examination were cross-tabulated. In all patients and their family members varicosity in legs was studied by Doppler Ultrasound and by clinical test to detect reflux in the veins. The information was recorded carefully on patient's Performa (which included family history of patients) after the consent of parents and guardians.

3. RESULTS

The occurrence of varicose veins was more frequent in patients with a positive family history mainly in the case of father affection. Analysis of 216 patients revealed 132 patients with family history of varicose veins. Twenty six patients were not interested to giving the family history as shown in Table- 1.

Table 1: Occurrence of the varicose veins in the family of patients.

Occurrence of VV in the family	N (216)	%
Yes	*132*	*61.11*
NO	*58*	*26.85*
Not specified	*26*	*12.03*

In the present study it was found that Individuals were more affected by varicose veins when parents and sibling had varicose veins. Family history screening revealed 63.63% cases development of varicose veins, when both parents were affected. There were 50% patients whose sibling had varicose veins or complained to have symptoms of varicose veins. Only 1.5% patients were those whose had cousin or nonfamily members affected with varicose veins as in Table-2.

Table 2: Relatives having varicose veins in families of patients.

Relationship of persons	N (216)	%
Mother	*76*	*57.57*
Grand mother	*51*	*38.63*
Father	*91*	*68.93*
Grand father	*55*	*41.66*
Both parents	*84*	*63.63*
Sister or brother	*26*	*19.69*
Next generation	*66*	*50.00*
Others	*13*	*09.84*
Aunt	*08*	*06.06*
Cousins	*02*	*01.51*

Out of 132 patients with positive family history, only twelve (09.09%) patients had one person from their family affected with varicose veins where as Sixty eight (51.51%) patients had two affected person in their family members and 53 had more than 3 affected persons, as shown in Table- 3.

Table 3: Number of persons with varicose veins in the family.

S. No	Affected persons with VV in the family	N (132)	%
1.	**1 Person**	*12*	*09.09*
2.	**2 Persons**	*68*	*51.51*
3.	**3 Persons or more**	*53*	*40.15*

The prevalence of varicose viens increased with age and even greater among those with a family history of the condition. In age group 21-30 out of seventy eight patients, forty six patients had the positive family history (Fig. 1).

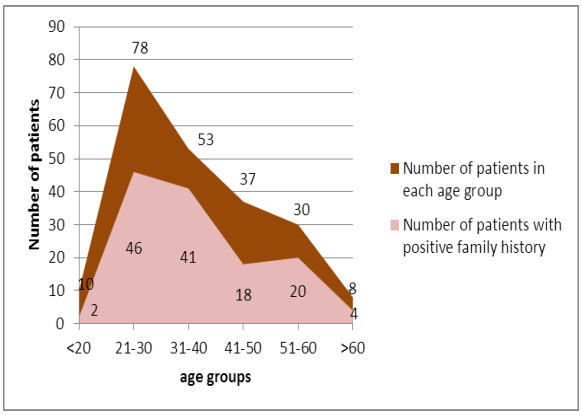

Fig 1: Number of patients with Positive family history in each age group.

Present data indicated family history as a high risk factor of varicose veins. Age and body mass index adjusted OR was 1.7920 (95% CI: .5119-6.273). The prevalence of

varicose patients with positive family history was 61.11%, 39.81% in males and 21.29% in females. Adjusted OR was 6.375 (95% CI: 0.7508-54.126) in males and 0.319 (95% CI: 0.0319-3.181) in females Table- 4.

Occurrence of varicose veins in several members of the same family had revealed importance of hereditary factors in causation of varicose veins.

Table 4: Adjusted odds ratios with 95% confidence intervals (CI) for prevalence (OR) of varicose veins by family history.

Family History	Prevalence of Varicose veins		
	No. (Cases)	(%)	Adj*OR (CI),
All No	58	26.85	**1**
Yes	132	61.11	**1.792**
Uncertain	26	12.03	**(.5119-6.273)****
TOTAL	216		
Male No	28	22.04	**1**
Yes	86	67.71	**6.375**
Uncertain	13	10.23	**(.7508-54.126)*****
TOTAL	127		
Female No	30	33.70	**1**
Yes	46	51.68	**0.3185**
Uncertain	13	14.60	**(0.0319-3.1817)**
TOTAL	89		

*= adjusted for age, body mass index (Average BMI with 25 kg/m2), in all-group also with sex. **= significant, ***= highly significant

4. DISCUSSION

Varicose veins is a frequently occurring disorder with a major impact on the life of the affected person and their family members. Varicose veins is present in about more than 10-15% of individuals in the general population of India.[17] However, the incidence is increasing day by day. Patients of varicose veins were screened for identifying the hereditary role. The various risk factors of varicose disease were examined and studied in patients and their family members.

Family history, the importance of heredity in varicose disease prevalence still presents controversial opinions, because some factors may influence heredity analysis. Present study revealed that family history with father affection was more frequent in patients. Varicose disease is very frequent in the population, causing high risk of varicose veins in family members. Moreover, it is easier for persons carrying varicosities to remember relatives who have the disease than for those who do not carry it and many authors have found a higher prevalence of varicose disease in persons with positive family history.[18, 19, 20, 21] In a study when both parents suffered from the varicose disease, their progeny had 90 per cent risk of developing the disease, compared to a 25% to 62% risk when only parent had it and 20% risk when neither parent had been affected.[22]

The familial factor for the development of varicose veins was seen in 33.34% of patients.[23] One Indian study found that 25% of patients had family history of their relative with varicose veins.[1] Analysis in the present study revealed that 61.11% of patients had affected family members with varicose vein, as shown in Table-5.

Table 5: Percentage frequency of family history of varicose veins patients.

Studies (Year)	% frequency of family history in patients of Varicose veins
Cornu-Thenard et al. (1994)	90.00%
Scott et al. (1995)	85.00%
Malik et al. (2004)	33.34%
Mirji et al. (2011)	25.00%
Present research	61.11%

It was reported that if mother having venous disorder, an advanced form of vein disease, increased a person's risk of developing leg ulcers nearly seven times.[24] In present study 57.57% cases have developed varicose veins, when mother was affected, whereas the risk was 68.93% when father was affected.

In present study the prevalence of varicose veins in patients with positive family history had adjusted OR as 6.375 (95% CI: 0.7508-54.126) in men and 0.319 (95% CI: 0.0319-3.181) in women. Still higher adjusted odds ratios for family history of venous disease were observed in patients with venous disease in study from France.[25] However there were reports of lesser odds ratio in a German study where odds ratio decreased in case of varicose veins in both parents.[26] In a Study, the multi-adjusted odds ratio in varicose veins patients was 2.9 (95% CI: 1.8–4.6) in men and 2.3 (95% CI: 1.8–3.1) in women Table- 6.[15]

The occurrence of varicose veins in the members of the same family suggests that hereditary factors may play important in causing varicose veins disease.

Table 6: Statistical analysis of varicose veins patients with family history.

Studies (Year)	Odd Ratio (95% CI) Comparison	
	Men	Women
Gourgou et al. 2002	7.2 (4.6–11)	7.7 (5.9–9.9)
Kroeger et al. 2004	3.7 (3–4.6)	2.8 (2.4–3.3)
Criqui et al. 2007	2.9 (1.8–4.6)	2.3 (1.8–3.1)
Present study	6.3 (0.75-54.1)	0.3 (0.03-3.1)

5. CONCLUSION

Screening of parents and family members revealed that familial occurrence of varicose veins in first degree relatives was the most important cause for varicose veins in both sexes. Disease risk is affected by genetic and environmental factors that family members often share. So there is a need to educate the people regarding this condition in order to prevent it. Along with family history, environmental change, lifestyle, pathological and gene mutation are responsible for physiological alteration in vein system. Collectively these factors led to venous insufficiency and finally varicose veins formation. Present study suggests family history as a strong component in the varicose veins disorder. This will be helpful in identifying high risk groups and clinicians can change his modalities according to improve prognosis.

6. ACKNOWLEDGEMENT

The authors are very grateful to the Pandit Bhagwat Dayal Sharma University of Health Sciences for support for this work.

REFERENCES

1. Pramod M, Shalish E, Chhaya J. Study of clinical features and management of varicose vein of lower limb. J Clinic Diagno Res, 2001; 5(7): 416-1420.
2. Evans CJ, Fowkes FGR, Ruckley CV, Lee AJ. Prevalence of varicose veins and chronic venous insufficiency in men and women in the general population: Edinburgh Vein Study. J Epidemio Comm Health, 1999; 53: 149–153.
3. Heit JA, Rooke TW, Silverstein MD. Trends in the incidence of venous stasis syndrome and venous ulcer: a 25-year population-based study. J Vasc Surg, 2001; 33: 1022–1027.
4. Ruckley CV, Evans CJ, Allan PL, Lee AJ, Fowkes FG. Chronic venous insufficiency: clinical and duplex correlations. The Edinburgh Vein Study of venous disorders in the general population. J Vasc Surg, 2002; 36: 520–525.
5. Meissner MH, Gloviczki P, Bergan J. Primary chronic venous disorders. J Vasc Surg, 2007; 46: 54–67.
6. Sisto T, Reunanen A, Laurikka J. Prevalence and risk factors of varicose veins in the lower extremities: mini-Finland health survey. Eur J Surg, 1995; 161: 405–414.
7. Mekky S, Schilling R, Walford J. Varicose veins in women cotton workers. An epidemiological study in England and Egypt. Br Med J, 1969; 2: 591–595.
8. Hirai M, Kenichi N, Ryu N. Prevalence and risk factors of varicose veins in Japanese women. .4ngiology, 1990; 3: 228-232.
9. Stvrtinova V, Kolesar J, Wimmer G. Prevalence of varicose veins of the lower limbs in the women working at a department store. Int Angiol, 1991; 10: 2–5.
10. Sadick NS. Predisposing factors of varicose and telangiectatic leg veins. J Dermatol Surg Oncol, 1992; 18: 883–886.
11. Komsuoğlu B, Göldeli O, Kulan K, Cetinarslan B, Komsuoğlu SS. Prevalence and risk factors of varicose veins in an elderly population. Gerontology, 1994; 40(1): 25-31.
12. Scott TE, LaMorte WW, Gorin DR, Menzoian JO. Risk factors for chronic venous insufficiency: a dual case-control study. J Vasc Surg, 1995; 22 (5): 622-8.
13. Jawien A, Grzela T, Ochwat A. Prevalence of chronic venous insufficiency (CVI) in men and women in Poland: Multicentre cross-sectional study in 40,095 patients. Phlebology, 2003; 18: 110–122.
14. Carpentier PH, Maricq HR, Biro C, Poncot-Makinen CO, Franco A. Prevalence, risk factors, and clinical patterns of chronic venous disorders of lower limbs: A population-based study in France. J Vasc Surg, 2004; 40: 650–659.
15. Criqui MH, Deneberg JO, Bergan J, Langer RD, Fronek A. Risk factors for chronic venous disease. The San Diego population study. J Vasc Surg, 2007; 46: 331-337.
16. Chen CL, Guo HR. Varicose veins in hairdressers and associated risk factors: a cross-sectional study. BMC Public Health, 2014; 14: 885-890.
17. Vardhan RK. Varicose Vein' – Ayurveda. Available at:- http://www.articlesbase.com/alternative-medicine-articles/varicose-veins-ayurveda-3212265.html ,2010.
18. Callam MJ. Epidemiology of varicose veins. Br J Surg, 1994; 81: 167-173.
19. Maffei FH, Magaldi C, Pinho SZ, Lastoria S, Pinho W, Yoshida WB, Rollo HA. Varicose veins and chronic venous insufficiency in Brazil: prevalence among 1755 inhabitants of a country town. Int J Epidemiol, 1986; 15: 210–217.
20. Griton P, Escalier-Imbert M, Cuffit A. Varicose disease. Epidemiologic study apropos of 1600 cases. Phlebologie, 1987; 40: 923-929.
21. Eklöf B, Rutherford RB, Bergan JJ, Carpentier PH, Gloviczki P, Kistner RL, Meissner MH, Moneta GL, Myers K, Padberg FT, Perrin M, Ruckley CV, Smith PC, Wakefield TW. American Venous Forum International Ad Hoc Committee for Revision of the CEAP Classification. Revision of the CEAP classification for chronic venous disorders:

consensus statement. J Vasc Surg, 2004; 40: 1248–1252.
22. Cornu-Thenard A, Boivin P, Baud JM, De Vincenzi I, Carpentier PH. Importance of the familial factor in varicose disease. Clinical study of 134 families. J Dermatol Surg Oncol. 1994; 20(5): 318-26.
23. Malik GA, Ahmmed G, Rehan TM. Varicose veins surgery; A day case procedure. The professional, 2004; 11(2): 121-129.
24. Berard A, Abenhaim L, Platt R, Kahn SR, Steinmetz O. Risk factors for the first-time development of venous ulcers of the lower limbs: the influence of heredity and physical activity. Angiology, 2002; 53(6): 647-657.
25. Gourgou S, Dedieu F, Sancho-Carnier H. Lower limb venous insufficiency and tobacco smoking: a case-control study. Am J Epidemiol, 2002; 155: 1007-1015.
26. Kroeger K, Ose C, Rudofsky G, Roesener J, Hirche H. Risk factors for varicose veins. Int Angiol, 2004; 23: 29–34.