

VARICOSE VEINS IN MALE WEAVERS AN EPIDEMIOLOGICAL STUDY

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Abstract

The prevalence of varicose veins was studied in 1742 male weavers in Iran by completing a specially designed questionnaire and medical examination. To show the effect of occupation on the prevalence of the disease, similar study was conducted on a group of 1661 food - processing workers. The over-all prevalence of the disease in the weavers (26.12%) was significantly higher than the similar rate (5.90%) in the other group. A direct relationship between the prevalence of the disease and age was observed in both groups, however, the increase was more significant among the weavers. A direct relationship was also seen between the length of employment and the prevalence of the disease in the weavers only. Comparison of the severity of disease in the two groups indicate that weavers not only had a higher prevalence rate, but had a more severe forms too. In conclusion, it may be said that varicose veins could be a health problem in the weavers and might be substantially reduced by preventive measures.

Introduction

The epidemiological studies of varicose veins in industrial populations and statistics from hospitals in different parts of the world indicate that, varicose veins

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is one of the most common ailments of people living in some industrially developed countries (1,4). The incidence varies from country to country and the high incidence of the disease in North America and Europe is in contrast to its rarity in Japan and Africa. In India, Pakistan, and Middle East, the situation is midway between Africa and North America (2,3). Although a minor condition, varicose veins is responsible for a significant loss of earning among the working class (1). This study compares the results of an epidemiological study of varicose veins in the male weavers and food-processing workers in Iran.

Material and Methods

In this study 1742 male weavers and 1661 male workers from a food-processing plant of similar socio-economic status, age and weight were examined for the presence of varicose veins. The food-processing plant workers, whose nature of work is different from that of the weavers, are referred to as "controls" in this paper.

Along with the medical examination, a questionnaire was administered covering age, sex, occupational history, history of varicose veins in the family, constipation, thrombophlebitis, hemorrhoids and heart diseases. To detect varicose veins, the workers were asked to stand, under proper lighting, in the examining room with the lower limbs completely exposed from groin to toes. The examination included inspection and palpation of the external and internal saphenous veins. Varicose veins were graded according to their severity as "Generalized" if more than two third of the course of the external or internal saphenous veins was involved, and "localized" if less than two third was involved.

Chi-square test was used throughout the study for the statistical evaluation of data.

Results

Response rate: There were a total of 1847 weavers in the three textile mills, 985 in mill No. I, 412 in No. II and 450 in No. III, of whom 954 (96.85%), 376 (91.26%) and 412 (91.58%) were examined respectively. Of the 1750 workers in the food-processing plant 1661 (94.91%) were examined

during the study.

Over all prevalence: The over all prevalence of varicose veins in the weavers was found to be 26.12% (almost same in all three mills). In the food-processing workers the rate was 5.90%. The difference was statistically significant ($P < 0.001$).

Age: Distribution of varicose veins and its type by age in the weavers revealed a direct statistical relationship between the prevalence of the disease and age i.e. the higher the age, the higher the prevalence (Table I). Further-more, the number of workers suffering from generalized type of varicose veins increases with age.

**TABLE I
PREVALENCE OF VARICOSE VEINS BY AGE IN WEAVERS**

AGE GROUPS (YEARS)	No. OF WORKERS EXAMINED	WITHOUT VARICOSE VEINS		WITH VARICOSE VEINS					
				LOCALIZE		GENERALIZE		TOTAL	
		No	%	No	%	No	%	No	%
< 19	52	52	100	0	0	0	0	0	0
20-29	430	371	86.28	59	13.72	0	0	59	13.72
30-39	554	432	77.98	117	21.12	5	0.90	122	22.02
40-49	528	341	64.58	146	27.65	41	7.76	187	35.42
50-59	164	85	51.83	46	28.05	33	20.12	79	48.17
60+	14	6	42.86	3	21.43	5	35.71	8	57.14
TOTAL	1742	1287	73.88	371	21.30	84	4.82	455	26.12

Family history: The prevalence of varicose veins was found to have a direct relationship with positive family history of the disease. The rates for weavers were 43.33% for those with positive family history and 25.82% for

those with no family history. Rates for food-processing workers were similar but significantly lower ($P < 0.01$), i.e. 13.04% and 5.80% respectively.

Occupation: The prevalence of varicose veins showed an increase with age both among weavers and the food-processing plant workers (Table II). This increase for each group was significantly higher among the weavers when compared with food-processing plant workers ($P < 0.001$).

TABLE II
PREVALENCE OF VARICOSE VEINS BY AGE IN WEAVERS AND CONTROLS

AGE GROUPS (YEARS)	WEAVERS			CONTROLS		
	No. OF WORKERS EXAMINED	WITH VARICOSE VEINS		No. OF WORKERS EXAMINED	WITH VARICOSE VEINS	
		No	%		No	%
< 19	52	0	0	42	0	0
20-29	430	59	13.72	409	8	1.96
30-39	554	122	22.02	522	32	6.13
40-49	528	187	35.42	512	41	8.01
50-59	164	79	48.17	164	15	9.15
60+	14	8	57.14	12	2	16.67
TOTAL	1742	455	26.12	1661	98	5.90

Length of employment: The length of employment revealed a positive relationship with the prevalence of the disease only in the weavers. As shown in Table III in each age group an increase in the length of employment is paralleled by an increase in the prevalence of the disease. This relationship is statistically significant ($P < 0.001$).

TABLE III
PREVALENCE OF VARICOSE VEINS BY LENGTH OF EMPLOYMENT
AND AGE IN WEAVERS

AGE GROUPS (YEARS)		LENGTH OF EMPLOYMENT (YEARS)				
		< 9	10 - 19	20 - 29	30 +	TOTAL
< 29	N	320	162	-	-	482
	X	35	24	-	-	59
	%	10.94	14.81	-	-	12.24
30 - 39	N	44	432	78	-	554
	X	8	88	26	-	122
	%	18.18	20.33	33.33	-	22.02
40 - 49	N	20	292	172	44	528
	X	4	83	72	28	187
	%	20.00	28.42	41.86	63.69	35.42
50 +	N	-	50	48	80	178
	X	-	15	21	51	87
	%	-	30.00	43.75	63.75	48.88
TOTAL	N	384	936	298	124	1742
	X	47	210	119	79	455
	%	12.24	22.43	39.93	63.71	26.12

N= NUMBER OF WORKERS EXAMINED

X= NUMBER OF WORKERS WITH VARICOSE VEINES

TABLE IV
SEVERITY OF VARICOSE VEINS MEASURED BY THEIR EXTENT
AND COMPLICATION IN THE WEAVERS AND CONTROLS

GROUPS	No. OF WORKERS WITH VARICOSE VEINS	UNILATERAL		BILATERAL		GENERALIZED			
						WITHOUT COMPLICATION		WITH COMPLICATION	
		No	%	No	%	No	%	No	%
WEAVERS	455	97	21.32	274	60.22	69	15.16	15	3.30
CONTROLS	98	57	58.16	38	38.78	3	3.06	0	0

Severity of the disease: Table IV shows the severity of varicose veins as measured by its grade and complication in both weavers and food-processing plant workers. It was found that the weavers had a more severe form of the disease. About 15% of the workers suffer from generalized type without complication and 3.35% with complication. These complications were: varicose ulcer (5 cases), oedema (4 cases) and pigmentation (6 cases). Among the food-processing plant workers only 3.06% suffered from the generalized type and non with complication. The differences between the two groups are statistically significant. ($P < 0.0001$).

Discussion

The present study clearly supports all previous observations that occupations requiring constant standing tend to cause varicose veins (1,4,5). The disease so developed is mainly due to inadequate functioning of peripheral venous pump due to inadequate contraction of leg muscles and continued strain induced by prolonged standing. Furthermore, this study indicates that the length of employment has significant effects on the prevalence and severity of the disease.

In conclusion, the prevalence of varicose veins among workers may be substantially reduced if prolonged standing during working hours is prevented by using ergonomically designed seats and paying more attention to detect minor abnormalities during medical examinations.

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