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Review

Epidemiology of varicose veins

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Assessment and treatment of varicose veins comprises a significant part of the surgical workload. In the UK, National Health Service waiting lists suggest that there is still considerable unmet need. This review analyses all published data on the epidemiology of varicose veins, paying particular regard to the differing epidemiological terminology, populations sampled, assessment methods and varicose vein definitions, which account for much of the variation in literature reports. Half of the adult population have minor stigmata of venous disease (women 50–55 per cent; men 40–50 per cent) but fewer than half of these will have visible varicose veins (women 20–25 per cent; men 10–15 per cent). The data suggest that female sex, increased age, pregnancy, geographical site and race are risk factors for varicose veins; there is no hard evidence that family history or occupation are factors. Obesity does not appear to carry any excess risk. Accurate prevalence data allow provision of appropriate resources or at least aid rational debate if demand is greater than the resources available.

Methodological problems

Chronic venous disease of the lower limbs ranks as one of the most common conditions affecting humankind[1]. An early health survey in the USA[2] found that a diagnosis of varicose veins was the seventh most common reason for medical referral. However, varicose veins represent only one end of the spectrum of venous disease which extends through increasing degrees of venous insufficiency and may result, in the most severe cases, in leg ulceration.

Many attempts have been made to study the epidemiology of venous disease over the past 50 years. However, critical analysis of this work leaves many questions unanswered because of the widely varying methods used to collect and quantify data. A clear grasp of these methodological problems is essential to any meaningful interpretation.

Epidemiological terms

Studies of the epidemiology of venous disease have used differing terms in the reports of their findings. Terms such as occurrence, frequency, incidence and prevalence have been used. Point prevalence is the number of patients with a condition at a single point in time, whereas period prevalence is the number of patients with the condition over a period of time. Incidence is the number of patients with the onset of the condition over a specific time period. In many of the earlier studies terms such as frequency and occurrence were used; these are even less precise. As varicose veins can be both chronic and recurrent, there is likely to be a marked difference between incidence, point prevalence and period prevalence. This poses considerable problems when attempting to correlate findings from different studies even when the epidemiological terms are adequately defined.

Population sampling

There is always a practical limit to the number of people who can be assessed in an epidemiological study. Likewise it is extremely unusual for every member of the group chosen for study to take part, because of time limitations or lack of consent. Much of the available data relates to highly selected groups of patients or people who almost certainly do not accurately represent the general population. It is, therefore, essential that the relationship between the sample actually studied and the whole population is analysed before any conclusions are drawn.

Method of assessment

Some studies have relied on a simple questionnaire, completed either by the patient, a member of the household or the interviewer. Several authors have shown[3,4] that this method of data collection is liable to gross error and is likely to underestimate the size of the problem. However, it has the advantage that it can be applied to a large population. Other reports have used more detailed assessment including full examination, vascular assessment and photography. While these studies are likely to be more accurate they are invariably smaller in terms of numbers studied.

Definition of venous disease

The recognized spectrum of venous disease of the lower limb is becoming increasingly broad; separation between normal and abnormal venous function becomes ever more difficult. Recent advances in vascular laboratory techniques allow assessment of both deep and superficial venous incompetence, as well as global assessment of the venous function of a leg, not only in patients with venous disease but also in people who are both asymptomatic and have no visible signs of venous disease. A number of screening studies in the general population are already under way[5,6]; it is these longitudinal studies using modern assessment techniques that in the long term will give a much better idea of both the prevalence of venous disease and the evolution of such disease in an individual.

Even in patients with clinically apparent varicose veins, the available epidemiological studies vary considerably in their definition of venous disease. Beaglehole[7] quotes differing but

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overlapping descriptive definitions of a varicose vein from four different studies[8–11] ranging from 'any prominent superficial vein in the lower extremity' to 'a vein which has permanently lost its valvular efficiency and, as a result of continuous dilatation under pressure, in the course of time becomes elongated, tortuous, pouched and thickened'. Even if the same definition is used, Weddell and others[4,12] have shown that considerable intraobserver variation can occur, leading to varying results. The position in which a person is examined may be crucial as some veins may be visible only in the vertical posture.

Unfortunately there is still no universally accepted classification of venous disease. The system used by Widmer[13] in the Basle study would seem to be the best available, but even this takes no account of tests of venous function and relates only to the clinical appearance of the limb (*Table 1*).

Table 1 Basle study venous classification[13]

No venous disease
Varicosities
Hyphenwebs
Reticular varices
Trunk varices
Chronic venous insufficiency
I Dilated subcutaneous veins, 'corona phlebectatica'
II Hyperpigmented or depigmented areas
III Open or healed leg ulcer

Epidemiology of varicose veins

The first major study of the epidemiology of varicose veins[2] was carried out as part of the United States National Health Survey of 1935–1936. This was based on a house to house questionnaire survey of 2·8 million people throughout the USA that was then extrapolated to the entire population. Varicose veins were estimated to have been present in 1·75 million of the population, and ranked seventh on the list of conditions surveyed. However, an exact point prevalence rate was not given. A further American National Health Survey[14] between 1959 and 1961 that examined severe chronic disabling conditions suggested a point prevalence of 2·25 per cent for 'severe' varicose veins.

Meanwhile between 1945 and 1956 in Europe similar large-scale sickness surveys were carried out, in the UK and Denmark. These very large national surveys primarily examined the consultation rate for varicose veins and other venous disorders. They have been reviewed in detail by Borschberg[15] and it was rightly concluded that, owing to their many methodological flaws, no statistically acceptable conclusion on the prevalence of varicose veins can be drawn from them.

Since that time there have been a further 21 local or regional studies of the prevalence of varicose veins[4,7–11,13,16–29]; these are summarized in *Table 2*. At first glance the range of results appears so wide that no useful conclusions can be reached; male prevalence has a range of 0·6–56 per cent and female prevalence 0·1–73 per cent. Although Alexander[30] has rightly described the data as 'frustratingly diffuse', it is possible to draw

Table 2 Studies of varicose vein prevalence

Reference	Year	No. of subjects	Prevalence (%)			Age range (years)	Country	Sample
			Men	Women	Total			
Maffei[16]	1986	1755	37·9	50·9	47·6	>15	Brazil	Clinic patients
Lake *et al.*[17]	1942	536	41	73	57	>40	USA	Store employees
Arnoldi[18]	1958	1981	18	38	28	>25	Denmark	Clinic attenders
Berge and Feldthusen[19]	1963	1354	50	—	—	50	Sweden	Community sample
Berge and Feldthusen[19]	1963	—	10	—	—	20	Sweden	Community sample
Recoules-Arche[20]	1965	5424	—	—	14	16–54	France	Community sample
Mekky *et al.*[8]	1969	504	—	32·1	—	15–74	England	Cotton workers
Mekky *et al.*[8]	1969	467	—	5·8	—	15–74	Egypt	Cotton workers
Miyauchi[21]	1913	50000	0·6	—	—	18	Germany	Military recruits
Bobek *et al.*[22]	1966	15060	6·6	14·1	11	>15	Bohemia	Community sample
Prior *et al.*[23]	1970	232	25	42	—	>20	New Zealand	Community sample
Stanhope[24]	1975	728	5	0·1	—	20–70	New Guinea	Rural villagers
Malhotra[9]	1972	354	6·8	—	—	18–65	North India	Railway workers
Malhotra[9]	1972	323	25·1	—	—	18–65	South India	Railway workers
Abramson[10]	1981	4802	10·4	29·5	—	>15	Israel	Random sample
Richardson and Dixon[25]	1977	1259	4·8	4·1	4·5	—	Tanzania	Clinic attenders
Hirai[26]	1990	541	—	45	—	>15	Japan	Patients and staff
Guberan *et al.*[27]	1973	610	—	29	—	15–70	Switzerland	Store employees
Coon *et al.*[11]	1973	6389	12·9	25·9	19·7	<10	USA	Random sample
Wright *et al.*[28]	1989	1338	—	—	25	20–75	England	Random sample
Leipnitz *et al.*[6]	1989	2821	14·5	29	20·2	45–65	Germany	Random sample
Widmer[13]	1978	4529	56	55	55	25–74	Switzerland	Factory workers
Rudofsky[29]	1988	14000	—	—	15	>15	Germany	Community sample
Weddell[4]	1969	100	—	—	15	<15	Wales	Random sample

Table 3 Factors affecting results in studies showing high prevalence of varicose veins

Reference	Year	Factors affecting prevalence				
		Age range	Varicose vein criteria	Sample	Race	Method of assessment
Lake *et al.*[17]	1942	+++	n.c.	+	n.c.	n.c.
Widmer[13]	1978	n.c.	+++	+	n.c.	++
Maffei[16]	1986	n.c.	+++	+++	n.c.	++
Berge and Feldthusen[19]	1963	+++	n.c.	n.c.	n.c.	n.c.
Hirai[26]	1990	n.c.	+++	++	n.c.	+
Abramson[10]	1981	n.c.	n.c.	n.c.	n.c.	n.c.

+, Small increase; ++, moderate increase; +++, large increase; n.c., no change

Table 4 Factors affecting results in studies showing low prevalence of varicose veins

Reference	Year	Factors affecting prevalence				
		Age range	Varicose vein criteria	Sample	Race	Method of assessment
Bobek *et al.*[22]	1966	n.c.	n.c.	n.c.	n.c.	n.c.
Malhotra[9]	1972	n.c.	n.c.	n.c.	−−	n.c.
Berge and Feldthusen[19]	1963	−−−	n.c.	n.c.	n.c.	n.c.
Stanhope[24]	1975	−	n.c.	n.c.	−−−	n.c.
Richardson and Dixon[25]	1977	n.c.	n.c.	+	−−−	n.c.
Miyauchi[21]	1913	−−−	n.c.	n.c.	n.c.	n.c.

−, Small decrease; −−, moderate decrease; −−−, large decrease; +, small increase; n.c., no change

some sensible conclusions from these studies if allowance is made for a number of factors inherent in the individual study designs that will influence the prevalence found. A clearer picture emerges if the studies are ranked in descending order of prevalence found and then assessed with respect to the following factors: age range and distribution of study population; criteria used to diagnose varicose veins; source and race or geographical site of the study population; and method used to assess venous disease. A normal study population is considered to consist of a community-based westernized Caucasian population of adults over 15 years of age, assessed by simple clinical examination for visible tortuous veins. Using this norm, each individual study has been examined to assess how it varies from that norm, and the likely effect of that variation on the prevalence results found. *Tables 3* and *4* show the studies with the highest and lowest prevalence rates for varicose veins from the 21 available reports, and the effect of the above factors on the prevalence rate found in each study.

It is clearly demonstrated in the studies with high prevalence rates (*Table 3*) that there are many factors that could increase the observed prevalence. Conversely, studies with low prevalence (*Table 4*) show that there are many factors that could decrease the observed prevalence rate. For example the studies by Widmer[13], Maffei[16] and Hirai[26] all used a definition of varicose veins that included all venous abnormalities in the legs, including minor intradermal venectasis, and not only clinically visible tortuous veins. Similarly, the studies by Lake *et al.*[17] and Berge and Feldthusen[19] included only people over 40 and 50 years old respectively, rather than the full age range of adults over 15 years. Conversely, studies by Berge and Feldthusen[19] and Miyauchi[21] (*Table 4*) sampled only 20- and 18-year-olds, and those of Malhotra[9], Stanhope[24] and Richardson and Dixon[25] described non-Caucasian populations. Several of the reports had samples selected from a particular group, such as hospital outpatients or store employees, which might have a moderate effect on the observed prevalence. A few of the studies used a very detailed assessment, including photography, which is also likely to increase the observed prevalence.

It is interesting to note that other studies with observed prevalence results in the middle range showed the least variation from the normal study population described above. If allowances are made for the aforementioned factors in studies that obtained high and low prevalence rates, it can be estimated that the prevalence of visible tortuous varicose veins in an unselected Western adult population over the age of 15 years is between 10 and 15 per cent for men and between 20 and 25 per cent for women. These estimates fit well with the incidence of new cases of varicose veins found over a 2-year period in the prospective Framingham population study[31] (men 1·97 per cent; women 2·6 per cent). Only a few studies[13,16,26,32] have included minor degrees of varicosity (e.g. venectasia) in their assessment. The available data suggest that approximately 45 per cent of men and 50 per cent of women have such changes.

Risk factors

It is beyond the scope of this paper to analyse the underlying pathophysiological mechanisms that cause varicose veins, but an understanding of the epidemiology of such veins does require knowledge of the major risk factors.

Sex

It is generally believed that varicose veins are commoner in women. However, this belief has not been accepted by all

Table 5 Sex ratio in studies of varicose vein prevalence

Reference	Year	Sex ratio (M:F)
Nobl[33]	1910	1:0·6
Nicholson[34]	1927	1:0·6
Widmer[13]	1978	1:1·0
Brand *et al.*[31]	1988	1:1·3
De Takats[35]	1929	1:1·5
Dodd and Cockett[36]	1956	1:1·5
Prior *et al.*[23]	1970	1:1·7
Larson and Smith[37]	1943	1:2·0
Pratt[38]	1950	1:2·0
Dodd[39]	1964	1:2·0
Drury[40]	1965	1:2·0
Lake *et al.*[17]	1942	1:2·0
Bobek *et al.*[22]	1962	1:2·1
Arnoldi[18]	1958	1:2·1
Lofgren[41]	1966	1:2·1
Logan and Cushion[42]	1958	1:2·5
Logan and Brooke[43]	1957	1:2·6
Harding Le Riche *et al.*[44]	1962	1:2·7
Abramson[10]	1981	1:2·8
Danish National Morbidity Survey[12]	1954	1:2·9
Haakenaasen[45]	1963	1:3·0
Dick[46]	1966	1:3·5
Weddell[4]	1969	1:3·5
Payne[47]	1936	1:4·0
Phillips[48]	1963	1:4·0
US National Health Survey[49]	1938	1:4·0

authorities. Nobl[33] in 1910 analysed 47 140 patients with 'varicose affections' from hospital and health insurance organizations and found that 61 per cent were men and only 39 per cent women; he not surprisingly claimed that varicose veins were not commoner in women. Nicholson[34], reviewing a series of 112 hospital patients with varicose veins in 1927, also found a male predominance. However, in both of these studies the sample was biased towards men and these conclusions have previously been shown[15] to be incorrect. More recently, Widmer[13] in the Basle survey found that there was little difference in the prevalence between men and women, but the sample of factory workers studied included relatively few women. All other series, using a wide variety of sampling techniques, definition of varicose veins and regardless of whether they were looking at incidence, point or period prevalence, have shown a female predominance with a female:male ratio up to 4:1 (*Table 5*). Two factors may account at least in part for the wide variation in results. First, the studies that gave a very high female predominance were almost exclusively questionnaire based and this method tends to be less accurate[3,4]. Second, the data from Berntsen[50] and the Basle study[13], among others, suggest that the female:male ratio increases with age; the varying ages of the samples in different studies may have contributed to the wide range of results. The weight of evidence shows a clear female predominance in the prevalence of varicose veins and the female:male ratio is between 1·5:1 and 3·5:1, depending on the definition used.

Age

The association between age and prevalence of varicosities appears clear. Widmer[13] showed a steady increase in prevalence with age for all grades of varicosity (*Fig. 1*). Data from other studies[10,11,14,16,26,51] show similar trends, although the absolute percentages vary because of the different definition of varicose veins and population samples used.

The longitudinal study set up by Schultz-Ehrenburg *et al.*[52] merits close study. A cohort of 518 school children were examined for the presence of varicose veins at between 10 and 12 years of age, and then again at 14–16 years. Clinical examination was supplemented by Doppler ultrasonography and photoplethysmography. Incompetence in the long or short saphenous vein was found in 3·1 per cent of the younger age group and in 12·3 per cent of the older children. No visible trunk varicosities were found in the younger group, but in 1·8 per cent of the older group these were present and a total of 3·7 per cent had visible varicosities. The follow-up of this cohort is continuing and will provide answers to many of the detailed epidemiological questions relating to the development of varicose veins.

Side

The venous drainage of the left leg follows a more tortuous course through the pelvis, with the left common iliac vein traversed by the right common iliac artery. It has been suggested that this renders the left leg more prone to both deep vein thrombosis (DVT) and varicose veins. Although there are some data which suggest that DVT is commoner on the left side[36], the available evidence indicates that varicose veins are no more common on the left than on the right. Varicose veins are frequently bilateral and in studies in which data have been analysed with regard to side no significant difference in the prevalence of varicose veins on the left and right has been demonstrated[13,16,36,50,53,54].

Pregnancy

Many women attribute the onset of varicose veins to pregnancy and most authorities now accept that there is an association between the two. Lake *et al.*[17], in a 1942 review of 536 women over 40 years of age, found that 66·9 per cent of childless women and 79·5 per cent of parous women had varicose veins. An editorial in the *British Medical Journal*[55] in 1965, quoting studies by Nabatoff[56], Kilbourne[57] and Dodd and Wright[54], estimated that between 8 and 20 per cent of women develop varicosities during pregnancy. The Basle study[13] also

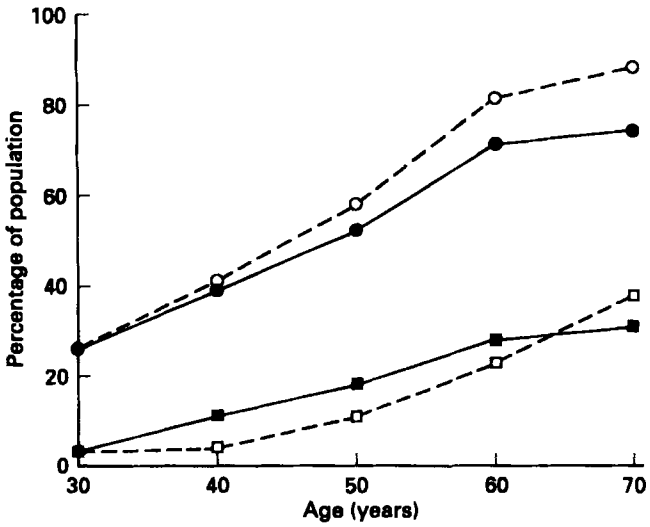

Fig. 1 Prevalence of varicose veins according to age. ●, Men (all veins); ○, women (all veins); ■, men (trunk veins); □, women (trunk veins). Based on Widmer[13]

demonstrated a significantly higher prevalence of truncal and reticular varicosities in parous women compared with childless women. Studies by Mullane[58], Donato and Nejamkin[59], Berge and Feldthusen[19], and more recently by Maffei[16] and Richardson and Dixon[25], all strongly support the concept that the prevalence of varicose veins increases with the number of pregnancies. In contast, both the Tecumseh Community Health Study[11] and the Jerusalem community survey[10] failed to show a rising prevalence with increasing number of pregnancies. Guberan and co-workers[27], who initially demonstrated a significant association between number of pregnancies and prevalence of varicosities, found that the significant difference disappeared when age variation was allowed for. Similar reservations were expressed by Drury[40]. It is likely that, in any sample, multiparous women will be older than those who have had only a single child. This may have caused bias in some of the earlier studies, but the most recent multiple correlation analysis still showed that multiple pregnancies increased the prevalence of varicose veins[16].

It is beyond the scope of this review to address the mechanisms by which pregnancy leads to varicose vein formation and whether these mechanisms have a primary effect or simply act as 'accelerators' of the process in susceptible individuals. However, the available evidence suggests that there is a genuine association between pregnancy and the prevalence of varicose veins. Multiple pregnancies further increase the risk to a minor extent.

Family history

Many patients and their medical attendants hold the view that varicose veins are familial. However, confirmation of this notion is hard to obtain for several reasons. First, as varicose veins are extremely common, almost everyone has at least one affected relative. Second, people who have varicose veins are more likely to know whether they have a relative who also suffers from the condition; this will bias any study based on a questionnaire in favour of a positive association.

The Basle study[13] showed that varicosity was more commonly found in patients with a positive family history of varicose veins than in those without such a history (men 67 *versus* 54 per cent; women 63 *versus* 52 per cent). Although all subjects in this study were examined to confirm that they did indeed have varicose veins, the family history was obtained from the patients themselves, with no examination of the relatives, giving rise to possible bias. Likewise studies by Hirai[26], Mekky and colleagues[8], Arnoldi[18] and Matousek and Prerovsky[60] have all shown a positive association between the prevalence of varicose veins and a family history of the condition. However, these too are open to bias, as in none of the reports were the relatives assessed clinically. A similar positive association was, however, found in a small study by Belcaro[61], who assessed saphenofemoral incompetence using carrier-wave Doppler ultrasonography in both parents and offspring.

Although it appears probable that there is a familial tendency to the development of varicose veins, particularly in the light of Belcaro's work, incontrovertible evidence is still not available.

Race and geographical location

The evidence that there is variation in the prevalence of varicose veins in different countries, and between different racial groups within a single country, will now be examined. Unfortunately very few direct comparisons have been carried out. Only limited conclusions can be drawn from a comparison between different studies, because of the variable criteria used in the study designs; this has already been discussed. The first direct comparison was in the United States National Health Survey[14] of 1961 which noted that, although 24·1 per cent of whites complained of varicose veins, only 10·4 per cent of black people had similar complaints. This was a questionnaire survey only, which depended on the respondents' subjective view of their disease and contained a relatively small number of black people. All of these factors may have given rise to an erroneous conclusion. A further direct comparison was made by Mekky *et al.*[8], who assessed two groups of approximately 500 women cotton wool workers in England and Egypt by means of a questionnaire and examination, to ascertain the prevalence of varicose veins; 32·1 per cent of the English women had varicose veins compared with only 5·8 per cent of the Egyptian workers. Even after correction for the fact that the Egyptian group was on average younger, the significant difference remained. More recently Maffei[16], in a well designed study in Brazil using the Basle study criteria, found a statistically significant difference in the prevalence of varicose veins between the white and non-white populations (49 *versus* 36 per cent). Lisitsyn[62] compared the prevalence of varicose veins in the then Soviet Union between the Siberian and Middle Asian peoples and found that they were much commoner in the Siberian population.

Although there is also a great deal of anecdotal data to suggest that varicose veins are less common in underdeveloped or non-Caucasian populations, as summarized by Alexander[30] and Beaglehole[7], much of it is unsuitable for detailed analysis as insufficient information about the methods, criteria and sample are given. *Table 6* lists the results from some of the better documented studies of prevalence in non-Caucasian and underdeveloped countries. The results support the view that varicosities are less common there than in Caucasian westernized societies. Whether these differences result from 'nature or nurture' is beyond the scope of this report, although the available evidence suggests that lifestyle is important.

Obesity

Although some patients who present with varicose veins –

Table 6 Prevalence of varicose veins in adults in non-Caucasian and/or underdeveloped countries

Reference	Year	Country	Prevalence (%)		
			Men	Women	Total
Nambiar[63]	1968	Singapore	—	—	8
Daynes and Beighton[64]	1973	Trankei	—	7·7	—
Burkitt *et al.*[65]	1975	India	1·2	0·8	—
Dalrymple and Crofts[66]	1975	Peru	—	—	0·1
Richardson and Dixon[25]	1977	Tanzania	6·1	5·0	—
Stanhope[24]	1975	New Guinea	5·1	0·1	—
Burkitt[67]	1972	Uganda	—	—	0·12
Rougement[68]	1973	Mali	10·9*	—	—
Malhotra[9]	1972	North India	7	—	—
Malhotra[9]	1972	South India	25	—	—
Mekky *et al.*[8]	1969	Egypt	—	6	—
Beaglehole *et al.*[69]	1975	Cook Islands			
		Rarotonga	16†	15	—
		Pukapuka	2	4	—
Beaglehole *et al.*[69]	1975	Tokelau Island	3	1	—

*Includes subjects with intradermal venectasis; †westernized Maoris

Table 7 Association between occupation and varicose veins

Reference	Year	Occupation	Cause
Positive association			
Mekky *et al.*[8]	1969	Cotton workers	Standing
Weddell[4]	1969	Community sample	Heavy lifting
Abramson[10]	1981	Community sample	Standing
Lorenzi *et al.*[51]	1986	Metal workers	Standing
No association			
Guberan *et al.*[27]	1973	Store employees	Standing
Maffei[16]	1986	Outpatients	Standing
Weddell[4]	1969	Community sample	Standing

particularly when young – are thin, it is most surgeons' experience that the majority tend to be overweight. Opinion remains divided as to whether obesity *per se* is a risk factor. Many early reports merely noted that patients with varicose veins were overweight without making any direct comparison with people without varicose veins. However, the Danish Sickness Survey[12] compared the expected proportion of overweight patients (from whole survey data) with the observed percentage in the group with varicose veins, phlebitis etc. The actual proportion was considerably higher than that predicted for women (36·3 *versus* 22·6 per cent), but the actual value was less than that predicted for men (13·3 *versus* 16·0 per cent). A similar relationship between obesity and varicose veins in women was found in both the Jerusalem community report[10] and the Basle study[13], even when allowance was made for variation in age. This association was not found in men after age correction. Conversely, Guberan and co-workers[27], Stanhope[24], Hirai[26] and Malhotra[9] failed to show an association between obesity and varicose veins in either sex. It appears that there is no association between obesity and varicose veins in men and that the evidence for such an association in women is mixed. The available data suggest that obesity is particularly associated with the more severe forms of varicose disease in women. As it seems unlikely that obesity is a risk factor in one sex and not in the other, perhaps obesity acts as a 'promoter' of varicose veins rather than a true primary risk factor.

Occupation

There is a widespread belief that certain occupations, particularly those that involve prolonged standing, are associated with an increased prevalence of varicose veins. However, such an association is extremely difficult to prove statistically. The available data are summarized in *Table 7*; it is impossible to state with any degree of certainty whether or not there is an association between occupations that involve much standing and varicose veins.

Miscellaneous factors

The data on other postulated risk factors such as diet[9,70], tight corsetry[8,10,27] and toilet posture[16,70] are insufficient for worthwhile analysis.

Conclusion

This paper has reviewed the available data on the epidemiology of varicose veins of the lower limb. Definitive answers to many important questions remain elusive, because of imperfections in the information available. The longitudinal studies currently being carried out by Weindorf and Schultz-Ehrenburg[5] and others should provide these answers in time. Meanwhile, *Table 8* represents the best estimate of prevalence of venous disease in the lower limb based on the currently available information. Data for the more severe degrees of venous disease are taken from an analysis of chronic venous insufficiency and leg ulceration[1]. Application of these figures to the population of a particular area will allow an estimate to be made of the number of patients with different degrees of venous disease; this should allow rational debate on the provision of resources.

Table 8 Prevalence of lower-limb venous disease in adults

	Prevalence (%)	
	Men	Women
Venous disease (all types)*	40–50	50–55
Visible varicose veins†	10–15	20–25
Chronic venous insufficiency‡	2–7	3–7
Chronic venous leg ulceration	0·5–1	1–1·5

*Any evidence of venous disease including venectasia; †reticular and truncal varicosities; ‡hyperpigmentation, eczema and liposclerosis

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