Epidemiology of Varicose Veins

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HOW COMMON IS VENOUS DISEASE IN THE POPULATION?

Venous disease is a common problem affecting humankind. Exactly how common, is difficult to determine, because relatively little epidemiological research has been conducted in this area [1].

This is perhaps because venous conditions have a very low public health priority.

Comparison of results from existing studies is difficult due to variations in methodologies and definitions employed and generalization of results is further hampered by a lack of data on samples.

Epidemiology of varicose veins
METHODOLOGICAL PROBLEMS

• Epidemiological terms
  \((\text{occurrence, frequency, incidence, prevalence})\)
• Population sampling
• Method of assessment
  \((\text{simple questionnaire, detailed assessment})\)
• Definition of venous disease
Prevalence and incidence are different measures of a disease's occurrence. The **prevalence** of a condition refers to the number of people who currently have the condition, whereas **incidence** refers to the annual number of people who have the condition. These two measures are very different.

Although many studies have reported a higher prevalence of varices in women than men, some of these differences may have resulted from methodological bias, and several recent studies do not support a higher prevalence in women.
There is always a practical limit to the number of people who can be assessed in an epidemiological study. 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 essential that the relationship between the sample actually studied and the whole population is analysed before any conclusions are drawn [2].
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 that this method of data collection is liable to gross error and is likely to underestimate the size of the problem.

Other reports have used more detailed assessment including full examination, vascular assessment and photography.

While these studies are likely to be more accurate they suffer from small sample size.
METHOD OF ASSESSMENT

In a British study comparison of questionnaire with examination findings for a self-selected group of subjects revealed a sensitivity of 76 % and a specificity of 86 % for the questionnaire [3].

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METHOD OF ASSESSMENT

Sisto et al. [4] used a questionnaire to determine the prevalence of previous diagnosis of varicose veins by a physician, but no validation of this method of assessment was performed.

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METHOD OF ASSESSMENT

Only 56% of women working in a department store in Czechoslovakia had themselves noticed the varicose veins which were diagnosed on examination [5].

Epidemiology of varicose veins
METHOD OF ASSESSMENT

In a study from Israel the sensitivity and specificity of interview was 47 % and 95 % in men and 67 % and 85 % in women respectively when the prevalence of varicose veins from interview data was compared with clinical examination data [6].

Epidemiology of varicose veins
DEFINITION OF VENOUS DISEASE

The term venous insufficiency covers a wide range of conditions, from asymptomatic incompetence of venous valves, through varicose veins, to chronic venous insufficiency and leg ulceration.

<table>
<thead>
<tr>
<th>Author</th>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Porter [7]</td>
<td>Varicose veins</td>
<td>Dilated, palpable subcutaneous veins generally larger than 4 mm</td>
</tr>
<tr>
<td></td>
<td>Reticular veins</td>
<td>Dilated, non-palpable subdermal veins 4 mm in size or less</td>
</tr>
<tr>
<td></td>
<td>Telangiectases</td>
<td>Dilated, intradermal venules less than 1 mm in size</td>
</tr>
<tr>
<td>Widmer [8]</td>
<td>Varicose veins</td>
<td>Dilated, tortuous trunks of the long or short saphenous vein and their major branches of the first or second order</td>
</tr>
<tr>
<td></td>
<td>Reticular veins</td>
<td>Dilated, tortuous subcutaneous veins, not belonging to the main trunk or its major branches</td>
</tr>
<tr>
<td></td>
<td>Hypenwebs</td>
<td>Intradermal venectasis</td>
</tr>
</tbody>
</table>

Definitions of venous dilation described by Porter et al. for reporting standards in venous disease [7] and definitions of varicose veins used by Widmer et al. in the Basle Study [8]

Epidemiology of varicose veins
PREVALENCE RATE OF VARICOSE VEIN

http://www.rightdiagnosis.com/v/varicose_veins/stats-country.htm

Epidemiology of varicose veins
# Prevalence Rate of Varicose Disease

## Epidemiology of Varicose Veins

Table 10.1 Prevalence of C0-C6 (CEAP) in recent studies from Western countries

<table>
<thead>
<tr>
<th>Reference year</th>
<th>Country</th>
<th>M/F proportion (%)</th>
<th>Age (years)</th>
<th>Sample size</th>
<th>C0</th>
<th>C1</th>
<th>C2</th>
<th>C3</th>
<th>C4</th>
<th>C5</th>
<th>C6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criqui [9] (2003)</td>
<td>USA</td>
<td>35.3/64.7</td>
<td>40-79</td>
<td>2211</td>
<td>19.0</td>
<td>33.6</td>
<td>11.0</td>
<td>57.6</td>
<td>23.3</td>
<td>15.0</td>
<td>5.8</td>
</tr>
<tr>
<td>Jawien (2003)</td>
<td>Poland</td>
<td>16.0/84.0</td>
<td>16-97</td>
<td>40095</td>
<td>51.5</td>
<td>16.5</td>
<td>16.5</td>
<td>21.8</td>
<td>4.5</td>
<td>4.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Rabe (2003)</td>
<td>Germany</td>
<td>43.9/56.0</td>
<td>19-79</td>
<td>3072</td>
<td>9.6</td>
<td>13.6</td>
<td>6.4</td>
<td>59.1</td>
<td>14.3</td>
<td>12.4</td>
<td>15.8</td>
</tr>
<tr>
<td>Carpentier (2004)</td>
<td>France</td>
<td>67.72/32.3</td>
<td>-</td>
<td>409</td>
<td>18.7</td>
<td></td>
<td></td>
<td></td>
<td>23.7</td>
<td>46.3</td>
<td>1.1</td>
</tr>
<tr>
<td>Chiesa (2005)</td>
<td>Italy</td>
<td>14.1/85.9</td>
<td>18-90</td>
<td>5187</td>
<td>22.7</td>
<td>36.0</td>
<td>20.6</td>
<td>64.8</td>
<td>33.4</td>
<td>69.9</td>
<td>29.4</td>
</tr>
</tbody>
</table>

*Highest assigned clinical category; † edema in the whole population; ‡ all clinical category listed; ¶ non-saphenous varicose veins; § saphenous varicose veins
INDIAN STUDIES

The extrapolated prevalence rate of varicose vein in India providing warning is about 47,928,177 in statistics [10]. According to another estimate 15 to 20% of population in India is suffering vein disease [11].


2. GANDHI, A Study to evaluate the effectiveness of self instructional module on knowledge regarding varicose veins and its prevention among teachers in selected primary schools of Mangalore Taluk. 2009

3. MALHOTRA, S. L (Chief Medical Officer, South Eastern Railway, Calcutta-43, India). An epidemiological study of varicose veins in Indian railroad workers from the south and north of India, with special reference to the causation and prevention of varicose veins. Int. J. Epid. 1972,1 : 177–183

Epidemiology of varicose veins
Risk factors associated with CVI and varicose veins have been well described. A strong familial relationship for varicose veins has been demonstrated in multiple studies [12]. However, with the exception of a few congenital disorders associated with varicose veins (e.g., Klippel–Trenaunay syndrome and Chuvash polycythemia), no specific gene has been identified with the development of varicose veins [13].
Increased age and female gender have also been demonstrated to be linked to the development of varicose veins in large epidemiological studies [14,15]. Furthermore, multiparous women have been shown to have a higher risk of developing varicose veins over time, independent of pregnancy-associated weight gain [16].
RISK FACTORS

However, obese women are three-times more likely than non-overweight women to develop and report varicose veins while no such relationship has been shown for men [17]. Finally, occupations that require long periods of standing have been associated with the development of varicose veins [18].

Epidemiology of varicose veins
RISK FACTORS

• **Age**: Incidence increases with age
• **Sex**: More common in females. Pregnancy may be the most important stress leading to varicose veins
• **Genetics**: Individual with a genetic predisposition may develop varicose veins when exposed to stress like obesity and pregnancy
• **Occupation**: It conflicts reports. But incidence is definitely higher in standing occupations like barbers
• **Parity**: Women with multiple pregnancies may be at risk
• **Diet**: Constipating diet may lead to straining, raised intra-abdominal pressure and this leads to varicose veins
• **Other factors** include obesity and heavy weight lifting.

Note:
These are co-relational studies and may not stand to scientific scrutiny.
Epidemiology studies have given us a good idea of the incidence and prevalence of varicose veins yet there are many indicators that new studies are required.

The last word has not been said on the epidemiology of varicose veins and it is still evolving.
References

References

References


Thank you for your attention!

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