A novel view to varicose veins pathogenesis:
Proteomic analysis

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I have the following potential conflicts of interest to report:

- [ ] Consulting
- [ ] Employment in industry
- [ ] Stockholder of a healthcare company
- [ ] Owner of a healthcare company
- [ ] Other(s)

- [x] I do not have any potential conflict of interest
Aims in varicose proteomic research

General goal:

• Better understanding of genesis and progression of varicose

Clinical goals:

• Early varicose detection using biomarkers
• Identification of potential therapeutic target structures
• Efficient monitoring of varicose (or indication for surgery)
Study design & Results

Change of protein level (in folds)

- $p \leq -95$ or $p \geq 95$ ("significant")
- $-95 \geq p \leq 95$ ("not significant")

<table>
<thead>
<tr>
<th>Proteins</th>
<th>Control</th>
<th>Control near varicose</th>
<th>Varicose</th>
</tr>
</thead>
<tbody>
<tr>
<td>CXXC11</td>
<td></td>
<td></td>
<td>60 kDa</td>
</tr>
<tr>
<td>SEH1L</td>
<td></td>
<td></td>
<td>46 kDa</td>
</tr>
<tr>
<td>GAPDH</td>
<td></td>
<td></td>
<td>37 kDa</td>
</tr>
<tr>
<td>Transmembrane protein 43</td>
<td>0.04</td>
<td>0.00</td>
<td>1.84</td>
</tr>
<tr>
<td>Myelin regulatory factor</td>
<td>0.04</td>
<td>0.00</td>
<td>1.72</td>
</tr>
<tr>
<td>Erlin-1</td>
<td>0.02</td>
<td>0.00</td>
<td>1.63</td>
</tr>
<tr>
<td>Cell surface glycoprotein</td>
<td>0.04</td>
<td>0.00</td>
<td>1.60</td>
</tr>
<tr>
<td>Keratin, type I cytoskeletal 19</td>
<td>0.05</td>
<td>0.00</td>
<td>1.41</td>
</tr>
</tbody>
</table>
Our proteomics discovery approach suggests that altered connective tissue proteins and increased proteolytic enzyme activity appear to be central to the pathophysiology of varicose veins.

Abnormalities in vein wall architecture probably precede the development of valvular incompetence and overt varicosities.

Larger studies are required to confirm the potential and clinical role of the identified proteins.