Treatment protocol on stasis edema in poorly mobile nursing home patients

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Conflict of interest:

This study was sponsored by MEDI Bayreuth
Background

- Prolonged immobility in a sitting position in the elderly: venous stasis with leg edema and skin changes
- Bandage application: solid experience
- CS and bandage: not easy to use.
Background (2)

Adjustable compression Velcro\textsuperscript{R} wraps

- Some studies (\textsuperscript{1-3}) : interest in different forms of edema and leg ulcers
- A recent study (\textsuperscript{4}) : Velcro\textsuperscript{R} wraps > short stretch after a 2-hour test in the stasis edema

In the elderly patients with a stasis edema: no study has objectively assessed adjustable compression wraps after a test of 30 days.

Best strategy to maintain the results after the reduction of edema?
Main aims

- To quantify the reduction of volume of the legs with an adjustable compression wrap after a daily wearing for 15 days
- To compare the effect of an adjustable compression wrap on the leg volume for the next 15 days with 15-20 mmHg CS.
MATERIAL and METHODS:

- 30 patients CEAP C3 to C5
- Nursing home > 1 month in Sénas (South of France)
- October 2017- April 2018
MATERIAL and METHODS (2)

- Circaid Juxtalite\textsuperscript{R} applied with a 40 mmHg pressure (Medi guide card)
- CS Mediven Microtec 15-20 mmHg
- Compressive treatment applied at least 8 hours a day
STUDY DESIGN

30 elderly patients
CEAP: C3 to C5

Randomization

Pilot monocentric study

Group 1
N=15
Circaid
One month

Group 2
N=15
Circaid 15 days
CS next 15 days
## Description of the population at the inclusion

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>88.9 (6)</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td>67.2 (17.2)</td>
</tr>
<tr>
<td>Height (cm)</td>
<td>160.4 (7.5)</td>
</tr>
<tr>
<td>BMI</td>
<td>26.2 (6.4)</td>
</tr>
<tr>
<td>Sex</td>
<td>Females : 28 Males :2</td>
</tr>
<tr>
<td>CEAP Clinical class</td>
<td>C3: 80%, C4: 10%, C5: 10%</td>
</tr>
<tr>
<td><strong>Primary causes of the poor mobility</strong></td>
<td></td>
</tr>
<tr>
<td>Hip or knee pathology or surgery</td>
<td>53.3%</td>
</tr>
<tr>
<td>Cognitive disorders</td>
<td>73.3%</td>
</tr>
<tr>
<td>Post stroke</td>
<td>13.3%</td>
</tr>
<tr>
<td>Other neurological disorders</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Degree of Immobility</strong></td>
<td></td>
</tr>
<tr>
<td>Wheelchair</td>
<td>43.3%</td>
</tr>
<tr>
<td>Crutch or walker</td>
<td>30%</td>
</tr>
</tbody>
</table>
INCLUSION CRITERIA

• Patients with poor mobility or unable to walk independently or unable to walk at all
• Patients with leg edema

NON INCLUSION CRITERIA

• Bedridden patients unable to sit
• Cancer
• Congestive cardiac failure
• Severe renal failure
• ABI < 0.6
• Exsudative or macerated skin lesion
**Parameters assessed**

- Volume with a Leg-O-meter
- Calculated the truncated cone formula
Results
4 patients were excluded

- Two in the group Circaid: one for cutaneous infection, one for delirious episode.

- Two in the group Circaid+ CS 15-20 mmHg: one for refusal to wear the compression, one for hospitalization.
Volume decrease after 15 days with Circaid Juxtalite

<table>
<thead>
<tr>
<th></th>
<th>D0</th>
<th>D15</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean (ml)</td>
<td>1355.8</td>
<td>1210.3</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>SD (ml)</td>
<td>233</td>
<td>193.4</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>&lt;10.8%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Median (ml)</td>
<td>1330.6</td>
<td>1151.9</td>
<td></td>
</tr>
<tr>
<td>%</td>
<td>&lt;13.5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min (ml)</td>
<td>929</td>
<td>831.8</td>
<td></td>
</tr>
<tr>
<td>Max (ml)</td>
<td>1829.5</td>
<td>1591.1</td>
<td></td>
</tr>
</tbody>
</table>
D0-D15 reduction phase
D15-D30 maintenance phase

At D0 and D15: Non significant differences between the 2 groups

At D30: **Circaid-CS** + 1.3 %
**Circaid-Circaid** - 1%  NS
Discussion

- **Circaid Juxtalite®:**
  - Reduction of volume comparable with the previously published results (Circaid Juxtafit®)
  - Quick and easy application does not require the presence of a trained nurse.
  - Short learning period.
Discussion

- The daily application of low pressure CS (15-20 mmHg) seems sufficient to maintain the medium-term results.

CS sufficient for opposing the venous hyperpressure created by a permanent sitting position in the elderly (Starling's law)

- Decrease of edema on the dorsal aspect of the foot: nocturnal lymphatic aspiration by lymphangions of the leg?
Conclusions

- Circaid Juxtalite® is very efficient in reducing stasis edema in the elderly.

- Stabilization of the leg volume with 15-20 mmHg CS: the pressure to maintain results does not require high back pressure?

- High pressure required to maintain the reduction of edema: a dogmatic view?
Do not hesitate to ask me the complete version

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