Drugs And Neuromuscular Stimulation (NMES) Can Improve Walking Distance With IC: How To Do It

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Cilostazol, naftidrofuryl oxalate, pentoxifylline and inositol nicotinate for the treatment of intermittent claudication in people with peripheral arterial disease

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Non-Invasive Management of Peripheral Arterial Disease

K.J. Williams, A. Baber, R. Ravikumar, and A.H. Davies

NMES:-

• Increase blood flow on flow measurements
• Increase in ICD 82%
• Increase in AWD 150%
**Methodology**

- **Eligibility screening/Recruitment**
  - Vascular Outpatient Clinic
  - Inclusion/Exclusion criteria
  - Information sheet

- **Baseline appointment**
  - Consent, clinical assessment
  - Outcome measures

- **NMES**
  - 6 weeks

- **Follow-up**
  - 6 weeks
  - Clinical assessment
  - Outcome measures

**Inclusion criteria**
- Stable IC
- ABPI < 0.9

**Exclusion criteria**
- Implanted electronic device
- Diabetes
- Foot deformities

**Primary Outcome**
- Treadmill Test
- Maximum Claudication Distance (MCD)

**Secondary Outcomes**
- Treadmill Test
- Initial Claudication Distance
- Quality of life questionnaires
- Intermittent Claudication Questionnaire (ICQ)
- EuroQol – 5D (EQ-5D)

**N=20**

**Results**

<table>
<thead>
<tr>
<th>Distance</th>
<th>Week 0 Mean ± SD</th>
<th>Week 6 Mean ± SD</th>
<th>Paired t-test (P value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MCD (m)</td>
<td>102.30 ± 58.84</td>
<td>187.20 ± 148.3</td>
<td>0.002</td>
</tr>
<tr>
<td>CD (cm)</td>
<td>50.50 ± 35.3</td>
<td>88.82 ± 56.91</td>
<td>0.008</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Week 0 Mean ± SD</th>
<th>Week 6 Mean ± SD</th>
<th>Paired t-test (P value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICQ</td>
<td>44.03 ± 22.25</td>
<td>35.23 ± 22.93</td>
<td>0.009</td>
</tr>
<tr>
<td>EQ-5D</td>
<td>0.5427 ± 0.2618</td>
<td>0.6441 ± 0.1825</td>
<td>0.009</td>
</tr>
</tbody>
</table>

**Conclusions**

- Functional improvement
- Subjective benefit
- Easy to use, portable, safe, convenient
- Large Multicenter RCT planned
  - Comparison of NMES clinical efficacy to SE

**Demographics**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>20</td>
</tr>
<tr>
<td>Age (mean range)</td>
<td>70.8 (52-89)</td>
</tr>
<tr>
<td>Sex (M:F)</td>
<td>16:4</td>
</tr>
<tr>
<td>Smoker (No:Yes)</td>
<td>6:16</td>
</tr>
<tr>
<td>BMI (Mean range)</td>
<td>27 (20-39)</td>
</tr>
<tr>
<td>Hypertension (No:Yes)</td>
<td>4:16</td>
</tr>
<tr>
<td>Stroke (No:Yes)</td>
<td>36:4</td>
</tr>
<tr>
<td>MI (No:Yes)</td>
<td>12:8</td>
</tr>
<tr>
<td>Hypercholesterolaemia (No:Yes)</td>
<td>2:18</td>
</tr>
<tr>
<td>Angina (No:Yes)</td>
<td>10:2</td>
</tr>
</tbody>
</table>

**Follow up**
Thank you