Medical shockwaves for chronic low back pain: a case series.

Kenneth Craig, Bradley Takai, Jacqueline Craig, Sarah Pelham, Danielle McDonald

Presenter: Kenneth Craig
Medical Director Kompass Health Associates
Kompass OrthoShock Centre of Extracorporeal Shockwave Therapy & Research
Auckland, New Zealand
Conflict of Interest Declaration

Royalties & stock options – NONE

Consulting Income – NONE

Research & Education Support – NONE

Other support - NONE
AIM

To discuss and invite more research in this area
Chronic Low Back Pain

- Impacts approx. 40% of the population at one stage
- Multi-factorial – mainly seen as mechanical in nature
  - Muscle strain
  - Joint strain
  - Disc herniation
  - Spinal stenosis
  - Spondylitis

- Mainly non-specific in nature
Chronic Low Back Pain

Management Guidelines (European / Australian-New Zealand)

Non – Surgical:
- Physical therapy / spinal manipulations
- Acupuncture
- Paracetamol
- Paracetamol + NSAID’s
- Nerve root blocks

Outcomes: Poor functional capacity restoration even when symptomatic relief is achieved.
Chronic Low Back Pain

Medical shockwaves a potential option?
<table>
<thead>
<tr>
<th>Material &amp; Methods</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No. Of Patients</td>
<td>10 (4 male); (7 female)</td>
</tr>
<tr>
<td>Pharmacogenics</td>
<td>All discontinued prior to Tx and remained throughout</td>
</tr>
<tr>
<td>Device</td>
<td>Electrohydraulic (MediSpec)</td>
</tr>
<tr>
<td>Treatment #</td>
<td>3 at 1 week intervals</td>
</tr>
<tr>
<td>Impulse #</td>
<td>1000 / Tx</td>
</tr>
<tr>
<td>EFDL</td>
<td>0.08mj/mm² (initial) 0.10 – 0.12mj/mm² (3rd- 4th)</td>
</tr>
<tr>
<td>Tx region</td>
<td>Erector spine region (L1 – Sacrum region) – bilaterally</td>
</tr>
</tbody>
</table>
### Outcomes Measurement Instrumentation

<table>
<thead>
<tr>
<th>Subjective pain scale – VAS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oswestry Disability Index (ODI) – percentage of perceived disability</td>
</tr>
<tr>
<td>dorsaVi-Move – quantitative digital range of motion sensors</td>
</tr>
</tbody>
</table>

**Oswestry Disability Index**

- 0 – 20% minimal disability
- 21 – 40% moderate disability
- 41 – 60% severe disability
- 61 – 80% crippled
- 81 – 100% bed ridden
Results

<table>
<thead>
<tr>
<th>Participants</th>
<th>Excellent</th>
<th>Marginal</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>9</td>
<td>1</td>
</tr>
</tbody>
</table>

**VAS (n=9)**

Baseline 6.7
Wk 3 3.5
Wk 12 0.5
Wk 24 0.5

**ODI**

Baseline 55%
Wk 3 40%
Wk 12 14%
Wk 24 14%

Oswestry Disability Index
0 – 20% minimal disability
21 – 40% moderate disability
41 – 60% severe disability
61 – 80% crippled
81 – 100% bed ridden
## Results

<table>
<thead>
<tr>
<th>Function</th>
<th>Baseline</th>
<th>Post ESWT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexion</td>
<td>82°</td>
<td>46°</td>
</tr>
<tr>
<td>Pelvic Position</td>
<td>-15°</td>
<td>10° *</td>
</tr>
<tr>
<td>Extension</td>
<td>-15°</td>
<td>-24°</td>
</tr>
</tbody>
</table>
Results (Example)

<table>
<thead>
<tr>
<th>Function</th>
<th>Baseline</th>
<th>Post ESWT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flexion</td>
<td>61° *</td>
<td>42°</td>
</tr>
<tr>
<td></td>
<td>Knees would bend to touch toes.</td>
<td>Knee remains locked to touch toes. Now with increased range.</td>
</tr>
<tr>
<td>Pelvic Position</td>
<td>-17°</td>
<td>8° *</td>
</tr>
<tr>
<td></td>
<td>Improved sitting posture.</td>
<td></td>
</tr>
<tr>
<td>Extension</td>
<td>-9°</td>
<td>-24°</td>
</tr>
</tbody>
</table>

Knees would bend to touch toes.
Knee remains locked to touch toes. Now with increased range.

Improved sitting posture.
Discussion & Conclusion

10 Participants (n=9 – excellent outcome); (n=1 – marginal)

Symptomatic relief

Functional improvement

Subjective report of improved stability, balance and confidence

Pharmacogenic baseline: total dependence (n=10)

Pharmacogenic post-ESWT: independent (n=7); infrequent (n=2)

*Omission of quantitative balance assessment: oversight*

More research is warranted in this area


