Physiotherapy and the Management of Low Back Pain

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Musculoskeletal Injury

• Results in:
  • Pain
  • Inflammation
  • Autonomic changes
  • Psychological effects
  • Loss of movement, function,
  • Loss of Fitness
    • Strength, endurance, power, cardiovascular fitness
  • Loss of proprioception
Contemporary Physiotherapy Model

- Diagnosis
- Goal setting
- Pain Management and education
- Psychosocial Management
- Restoration of Movement, motor control and strength
- Prevention of Re-injury
- Ergonomics and biomechanics
- Fitness and functional testing
Necessary Physiotherapy Skills

- History taking including understanding of disability scales
- Physical Assessment
- Anatomy, Functional anatomy and biomechanics
- Manipulation, massage and other modalities such as needling
- Psychology
- Goal Setting and communication
- Strength and conditioning
- Functional testing
- Literature critical analysis
Effective Physiotherapy Requires

- Sufficient time spent with patients
- One to one management
- Use of appropriate equipment
Low Back Pain

• High prevalence
• One study in UK indicated a 1 month prevalence of 37%
• Approximately 30 % of our work (80 new cases per month)
## Possible Musculoskeletal Causes of Lumbopelvic Pain

<table>
<thead>
<tr>
<th>Cause</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervertebral Disc</td>
<td>25 - 39%</td>
</tr>
<tr>
<td>Sacroiliac Joint</td>
<td>15 - 40%</td>
</tr>
<tr>
<td>Nerve Root</td>
<td>6 – 13%</td>
</tr>
<tr>
<td>Facet Joint</td>
<td>2 – 10%</td>
</tr>
<tr>
<td>Muscle/Ligaments</td>
<td>Unknown</td>
</tr>
</tbody>
</table>
Low Back Pain

- Acute vs Chronic
Acute Low Back Pain

- Rarely have a definite diagnosis
- Optimal model not established
- ? Limited literature that actually examines what happens in the real world
- A sub-group of patients who we really struggle to manage adequately
Acute Low Back Pain

- Common
- The majority improve significantly over 3 months
- Ongoing low level symptoms are common
- 44 – 90 % recurrence
- 6% significant long term issues
Stages of Treatment

- Acute
- Functional Recovery
- Prevention

- Ankle Sprain Example
Acute Low Back Pain – Physio Management

- **Acute Phase – Pain relief, protection, education**
  - Bracing, Taping, to protect injured structures and for pain relief
    - Demonstration
  - Advice/Goal Setting/Education (back book)
    - Encouraged to see GP for analgesia
    - Reassurance
    - Need to stay active – how active needs to be specified
- Corrective exercises
  - Demonstration of flexion extension in 4 pt kneeling
- (Modalities for pain relief – massage, needling, TENS, Ultrasound)
- Ergonomics
  - Demonstration of Correct Sitting vs Incorrect Sitting
Ergonomics
Changes in Disc Pressure (Nachemson)
Acute Low Back Pain – Physio Management Continued

- **Functional Recovery Phase**
  - Exercises and Mobilisation to restore range of motion
    - Demonstration
  - Exercises to restore muscle function
  - Graded exposure to pre-injury activity
  - Advice and Education
  - Ergonomics/Manual handling retraining
    - DEMONSTRATION
    - What is optimal back position for lifting
Acute Low Back Pain – Physio Management

- Prevention
  - Progression of exercises
  - Manual handling training
  - Overall body strengthening
Acute Low Back Pain - Evidence

• Basically 2 viewpoints
  • Assess/advised to stay active/Physio
  • Assess/advised to stay active/wait and see
Acute Low Back Pain Evidence

• Wand (2004)
  • Compared 2 models
    • Assess/advise/treat vs. Assess/Advise/Wait
    • Intervention – Biopsychosocial education, manual therapy and exercise
    • Study outcomes – Pain, functional disability, mood, general health, quality of life
  • assess/advise/treat group did better on all measures at 6 weeks and most measures at 12 months
Acute Low Back Pain Evidence

- Hides (1996, 2001)
  - Found that muscular recover (Multifidus) was not automatic after resolution of NSLBP
  - Hypothesised that the back is vulnerable to re-injury due to loss of muscle function
  - Retraining of the muscle - 12 Month recurrence rates c.f. controls 30% vs. 84%
Summary

• Physios need to use the modern model to be effective
• Manipulation/mobilisation/needling have some soft evidence to support them and in the clinic help some patients
• They have very limited value past 6 weeks where the approach needs to be focused on exercise, biomechanics and ergonomics
• Future research needs to look further at this multi-modal approach
• Further progress may be possible with sub-categorisation of low back pain into sub-categories
• Further research needed into the non-responders
Timing of Referrals

• Early Referral
  • Earlier pain relief
  • Reduced secondary changes such as loss of muscle function
  • Removal of Drivers such as poor posture, fear avoidance
Chronic Low Back Pain

• Some evidence for
  • Manual treatment
  • Exercise
  • Education

• But Good evidence for a combination of these
Chronic Low Back Pain

- Manual Therapy
- Targeted Education
- Specific Muscle Strengthening

- Effective in Improving pain and disability

Eraring Study

- 8 Participants with Chronic Low Back Pain
- 16 week intervention of supervised exercise and home exercises
- VAS 24% lower
- Disability Scores 19% lower