Conservative Management of Osteoarthritis

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Acknowledgements: Kim Bennell
Presentation overview

• Overview of current evidence for conservative management of OA (Amy Bach):
  • Education
  • Exercise
  • Weight loss
  • Adjuncts (e.g. bracing; orthotics)
• Epworth Camberwell Arthritis Program (Catherine Louis)
  • Program outline
  • Pilot study outcomes
Best practice: Stages of OA

MILD

- Non-pharmacological management: EDUCATION, EXERCISE, WEIGHT LOSS
- Non-pharmacological management: PHYSIOTHERAPY, BRACES

SEVERE

- Pharmacological management: SIMPLE ANALGESICS, NSAIDS, OPIOIDS
- Surgical management: OSTEOTOMY, TOTAL JOINT ARTHROPLASTY

Bennell et al BMJ 2013
Biopsychosocial management

- **Biological:**
  - Joint damage
  - Muscle dysfunction
  - Altered biomechanics

- **Psychological:**
  - Pain
  - Health benefits
  - Cognitions
  - Fears

- **Socioeconomic:**
  - Social support
  - Relationships
  - Occupation

*Integrated intervention (exercise plus pain coping skills training) = most cost-effective approach*
Education: key principles

- Pathophysiology: whole joint disease including inflammation
- Imaging: XR findings do not correlate with symptoms
- Reduce fear-avoidance: importance of language (e.g. avoid “wear and tear” as implies that activity will worsen disease)
- Reassurance: effective treatments exist
- Patient has a key role in management
- Self-management resources:
  - www.myjointpain.org.au
  - www.arthritisaustralia.com.au
Exercise

- High quality (Level 1) evidence for exercise in the management of OA (irrespective of disease severity, pain levels or functional status: Bennell et al Best Practice & Res Clin Rheum 2014)
- Exercise is as effective as drugs (Zhang et al Osteoarth Cart 2010)
  - For every additional 10 supervised sessions, the effect size increased by an amount comparable with pain relief with simple analgesia (Juhl et al Arth Rheum 2014)
- Type of exercise: combination of strengthening, aerobic (land or aquatic) and flexibility most effective) (Uthman et al 2013)
- Mode of delivery: supervised (group or individual) is essential
  - “Minimalist” exercise approach is ineffective (Ravaud et al Ann Rheum Dis 2004) e.g. unsupervised generic exercise program, booklet, no follow up
- Dosage: needs to be at least 3 times weekly; ≥12 sessions total; alternate the type of exercise on each day (Juhl et al 2014)
Weight Loss

- Weight loss of > 5% at a rate of 0.24% per week over 20 weeks in people with knee OA → SYMPTOMATIC RELIEF (Christensen et al Ann Rheum Dis 2007)
- Greater effect size with combined diet + exercise approach (Messier et al JAMA 2013):
  - Reduction in mean pain
  - Reduction in mean knee compressive load
  - Reduction in inflammation (measured by mean Interleukin-6)
Other interventions / adjuncts

- **Manual therapy:** some evidence for hip / knee OA (Abbott et al *Osteoarth Cart* 2013)

- **Bracing:**
  - Unloader braces: some evidence for improvement in pain and function (Mayer et al in press *Arthritis Care Res*)
  - Neoprene sleeves: short term effect on pain only (Mazzuca et al *Arth Rheum* 2004)
  - Patella stabilising braces: no effect on symptoms (Hunter et al *Osteoarthritis Cart* 2011)

- **Taping:** evidence as short term strategy: realign patella and unload soft tissues (Hinman et al *Brit Med J* 2003)

- **Orthotics and footwear:**
  - Lateral wedge insoles: no effect on knee load (12 mth study; Bennell et al *BMJ* 2011)
  - Flat, flexible shoes are superior to rigid heel / ‘supportive’ shoes (for knee loads); custom-modified shoes: early evidence for significant reduction in pain and knee load (Bennell et al *Arthritis Rheum* 2013)
Other interventions / adjuncts

• **Arthroscopy**: moderate evidence of **NO** benefit for degenerative meniscal tears in comparison with non-operative or sham in middle aged patients with mild or no OA (Khan et al *CMAJ* 2014)

• **Glucosamine and Chondroitin**: no evidence in NICE 2014, OARSI 2014 and ACR 2012 guidelines

• **CS Joint Injection**: supported in NICE 2014 and OARSI 2014 guidelines

• **Hyaluronic acid**: not recommended (NICE 2014, OARSI 2014 and ACR 2012 guidelines)

• **Acupuncture**: evidence inconclusive (OARSI 2014)
Summary

• Need increased emphasis on non-pharmacological management
• Biopsychosocial model for disease management
• **Education, exercise and weight loss** = core treatments (currently under utilised: 43% of OA pts received appropriate care in study by Runciman et al *Med J Aust* 2012)
• Create a positive expectation of benefit
• Need better self management support
Epworth Rehabilitation Arthritis Program

- Overview of program
- Pilot Group Outcomes (August 2015)
- Patient feedback
- How to refer
Overview of Program

• 8 week program

• All types of Arthritis (predominant referrals to date = OA)

• Initial and Discharge Assessment with Physiotherapist

• Twice weekly land-based exercise sessions supervised by a Physiotherapist

• Weekly hydrotherapy sessions

• Multidisciplinary Education program
  • Physiotherapy
  • Dietetics
  • Psychology
  • Occupational Therapy
## Overview of Program

<table>
<thead>
<tr>
<th>WEEK</th>
<th>TUESDAY</th>
<th>FRIDAY</th>
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<tbody>
<tr>
<td>1. Tuesday 25/8</td>
<td>1:00-2:00 Education Topic One – Evidence and Overview of arthritis/Exercise for arthritis/pain beliefs</td>
<td>1:00 Land therapy</td>
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<td></td>
<td>Land therapy</td>
<td>2:00-3:00 Hydrotherapy</td>
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<td>2:00-3:00 Land therapy</td>
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<td>2. Tuesday 1/9</td>
<td>1:00-2:00 Land Therapy</td>
<td>1:00 Land therapy</td>
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<td>2:00-3:00 Education Topic Two – Diet for Arthritis and Weight Management</td>
<td>2:00-3:00 Hydrotherapy</td>
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<td>2:00-3:00 Land therapy</td>
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<td>3. Tuesday 8/9</td>
<td>2:00-3:00 Education Topic Three – psychology – Coping with Arthritis</td>
<td>1:00 Land therapy</td>
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<td>2:00-3:00 Land therapy</td>
<td>2:00-3:00 Hydrotherapy</td>
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<td>4. Tuesday 15/9</td>
<td>1:00-2:00 Land therapy</td>
<td>1:00 Land therapy</td>
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<td>2:00-3:00 Education Topic Four – Pacing, Joint Protection and Pain Management with Arthritis</td>
<td>2:00-3:00 Hydrotherapy</td>
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<td>5. Tuesday 22/9</td>
<td><strong>Home exercise program</strong></td>
<td><strong>Home exercise program</strong></td>
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<td>6. Tuesday 29/9</td>
<td>1:00-2:00 Land therapy</td>
<td>1:00 Land therapy</td>
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<td>2:00-3:00 Education Topic Five – psychology lecture 2 – Relaxation and Mindfulness</td>
<td>2:00-3:00 Hydrotherapy</td>
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<td>7. Tuesday 5/10</td>
<td><strong>Home exercise program</strong></td>
<td><strong>Home exercise program</strong></td>
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<td>8. Tuesday 13/10</td>
<td>1:00-2:00 Land therapy/discharge outcome measures</td>
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<td>2:00-3:00 Education Topic 8 – Where to from here</td>
<td>2:00-3:00 Hydrotherapy</td>
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<td>9. Tuesday 20/10</td>
<td><strong>FOLLOW UP PHONE CALL</strong></td>
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<td><strong>FOLLOW UP PHONE CALL AND OUTCOME MEASURES</strong></td>
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*Epworth HealthCare*  
### Initial and Discharge Assessments

- Each patient individually assessed by Physiotherapist
- Standardised Outcome Measures completed
- Screened for individual dietician/occupational therapy/psychology involvement in addition to group education sessions
Land-based exercise therapy

- Programs are individually tailored to each patient based on initial assessment and patient-specific goals

- Aerobic Exercise (Walking/treadmill; Exercise Bike; Cross trainer)

- Strengthening Exercises (Weights; Resistance bands; Gym equipment; Pilates Reformers)

- Stretches

- Balance exercises
Hydrotherapy

• Programs are individually tailored to each patient based on initial assessment and patient specific goals

• Aquatic exercise involves exercising in a pool heated to approximately 34 degrees

• Efficacy through reduced pain and joint load secondary to physiological effects of buoyancy
Multidisciplinary Education

- Physiotherapy
- Dietician
- Psychology
- Occupational Therapy
Physiotherapy Education

• Pathophysiology: whole joint disease including inflammation
  • Pain sciences & pain beliefs (e.g. Imaging: XR findings do not correlate with symptoms)
• Reassurance & goal setting: effective treatments exist; functional goals
• Self-management strategies for managing pain including community resources
• Benefits of exercise for arthritis
• Exercise guidelines for arthritis: dosage and type
  • All Australian adults should be aiming to do 30 minutes of exercise per day
  • Low impact type exercises often most comfortable for people with Arthritis
  • Strength training
  • Aerobic exercise
  • Flexibility (stretches)
Dietetics Education

• Healthy eating guidelines

• Weight management strategies

• Completion of a food and beverage record

• Individual dietician sessions available as required
Psychology Education

• 2 sessions included in group program

• Referral for individual psychology based on DASS21 score.

• Topics covered include:
  • Coping with a chronic disease
  • Strategies to improve wellbeing
  • Developing healthy lifestyle habits
  • Relaxation
  • Mindfulness
  • Stress management
Occupational Therapy Education

• Joint protection strategies

• Energy conservation strategies

• Pacing strategies

• Practical tips for daily activities
Pilot Group Outcomes

**Group Demographics:**

- 5 participants
- Age range 40-85 years
- Diagnoses:
  - Knee OA (x2 patients)
  - Reactive Arthritis
  - Generalised multi-joint OA
  - Lumbar Spine and hands
Outcomes: Standardised Measures

- All patients had clinically significant improvements on standardised gait tests
- All patients demonstrated clinically significant increases in muscle strength and flexibility
- 50% demonstrated improved WOMAC scores (Pain and Physical Function)
- Nil significant changes to DASS21
Outcomes: Patient Satisfaction

- 100% reported program as being “very helpful” for management of Arthritis
- 80% report to have progressed “a lot” during the program
- 100% would recommend the group to other people with Arthritis
- Narrative feedback:
  - “It made me realise that you can live with it and exercise within your limits”
  - “I particularly liked the group interaction”
  - “I liked the hydrotherapy, gym work and dietician session”
How to refer

• Fax: (03) 99826696

• Email: rehab@epworth.org.au

• For further enquires contact the Epworth Camberwell Orthopaedic Outpatient team on (03) 98054179