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

Pharmacological management:
SIMPLE ANALGESICS, NSAIDS, OPIOIDS

Surgical management:
OSTEOTOMY, TOTAL JOINT ARTHROPLASTY

SEVERE

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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| 1. Tuesday 25/8 | 1:00-2:00 Education Topic One - Evidence and Overview of arthritis/Exercise for arthritis/pain beliefs Land therapy  
                  2:00-3:00 Land therapy                                                | 1:00 Land therapy                                                     
                  2:00-3:00 Hydrotherapy                                               |
| 2. Tuesday 1/9  | 1:00-2:00 Land Therapy                                                 | 1:00 Land therapy                                                     
                  2:00-3:00 Education Topic Two - Diet for Arthritis and Weight Management | 2:00-3:00 Hydrotherapy                                               |
| 3. Tuesday 8/9  | 2:00-3:00 Land therapy                                                 | 1:00 Land therapy                                                     
                  2:00-3:00 Education Topic Three - psychology - Coping with Arthritis | 2:00-3:00 Hydrotherapy                                               |
| 4. Tuesday 15/9 | 1:00-2:00 Land therapy                                                 | 1:00 Land therapy                                                     
                  2:00-3:00 Education Topic Four - Pacing, Joint Protection and Pain Management with Arthritis | 2:00-3:00 Hydrotherapy                                               |
| 5. Tuesday 22/9 | Home exercise program                                                  | Home exercise program                                                 |
| 6. Tuesday 29/9 | 1:00-2:00 Land therapy                                                 | 1:00 Land therapy                                                     
                  2:00-3:00 Education Topic Five - psychology lecture 2 - Relaxation and Mindfulness | 2:00-3:00 Hydrotherapy                                               |
| 7. Tuesday 6/10 | Home exercise program                                                  | Home exercise program                                                 |
| 8. Tuesday 13/10| Home exercise program                                                  | Home exercise program                                                 |
                  1:00-2:00 Land therapy/discharge outcome measures                 | 1:00 Land therapy/discharge outcome measures                           
                  2:00-3:00 Education Topic 8 - Where to from here                  | 2:00-3:00 Hydrotherapy                                               |
| 12. Tuesday 20/10| FOLLOW UP PHONE CALL                                                   | FOLLOW UP PHONE CALL                                                   |
                  FOLLOW UP PHONE CALL AND OUTCOME MEASURES                      | FOLLOW UP PHONE CALL AND OUTCOME MEASURES                            |
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 week
  • 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