Podiatrist in the Rheumatology team?

21st January 2017
‘All people with RA and foot problems should have access to a podiatrist for assessment and periodic review of their foot health needs.’

NICE 2009
• Foot problems are common in rheumatology

• Foot problems are often missed in rheumatology because of lack of confidence or competence in assessing the feet

• A simple but comprehensive clinical assessment of the foot can be performed in around 1 minute

• Many rheumatological foot problems can be managed by the patient, with judicious advice on footwear and simple orthoses

• In people with systemic diseases, foot problems are complex and often require referral and appropriate multidisciplinary care.
‘Foot problems are common in rheumatology’

RA commonly affects the foot having diverse multidimensional implications including –

• pain,
• changes in gait,
• deformity and
• restrictions in the choice of footwear (Bouysset et al. 2006).

The basic pathological changes in the rheumatoid foot result from -

• synovitis coupled with mechanical stress (Spiegel & Spiegel 1982).
• structural and functional changes often affect gait and mobility (Woodburn 2002, Turner et al. 2006),
• impacting on the patient’s quality of life (Wickman et al. 2004).
• The foot is often the first area of the body to be systematically afflicted by RA (Otter et al. 2004).
• 75% of patients with RA report foot pain within 4 years of diagnosis (Lohkamp et al. 2006),
• virtually 100% of patients report foot problems within 10 years of disease onset.
Radiographic progression is faster in the earlier stages of the disease

2. Larsen and Thoen, 1987
3. Ferraccioli et al. 1989
‘A simple but comprehensive clinical assessment of the foot can be performed in around 1 minute’

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**LOOK**
Observation (LOOK) of the overall structure of the foot, progressing: bones, joints, soft tissue, skin.

**FEEL**
Palpation (FEEL) of regions of interest, again thinking: bones, joints, soft tissue, skin.
In rheumatology: focus on ankle margins, subtalar margins and midtarsal and forefoot joints before progressing to palpating tendons and bursae.

**MOVE**
MOVE the relevant functional units:
- ankle (active before passive)
- subtalar joint (passive only)
- midfoot
- metatarsophalangeal joints
- interphalangeal joints.

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FIGURE 4. A simple assessment schema for a 1-minute clinical examination of the foot.
The gait pattern in RA was characterised by –

- decreased walking speed,
- decreased cadence decreased stride length
- decreased ankle power
- increased double limb support time
- increased peak plantar pressures at the forefoot
- Walking velocity was reduced in psoriatic arthritis and gout with no differences in ankylosing spondylitis.
- No studies have been conducted in polymyalgia rheumatica, systemic sclerosis or systemic lupus erythematosus*

*Cherry et al 2016(UK survey lower limb and foot health problems in SLE responders)182n (37% previous and 12% current episode of altered gait/LL function)
• Be systematic...
• – Ankle region, heel, midfoot, forefoot & toes
• – Check for soft-tissue swelling, discrete
• masses, joint swelling (location- medial,
• dorsal/plantar and deformity
• (type & severity, etc).
– Conduct NWB and WB noting changes with foot under load
Daylight sign + ‘like walking on pebbles’ = Refer to Rheumatology

FIGURE 5. ‘Daylight sign’ associated with significant synovitis in the 2nd and 3rd metatarsophalangeal joints.
Not MOVE
• Be systematic... feel around ankle and rearfoot, the midfoot, the forefoot and toes

• Use fingers as pressor/sensor

• Feel soft-tissue swellings- warm boggy & distributed along tendon length (tenosynovitis), tense fluid filled (bursae / bursitis / nodules).

• Peripheral temperature

• Firm palpation in known tender areas plantar fasciitis.

• Percussion for TTS (Tinel’s sign)
• Tib’ Post’ and Flexors hallucis and digitorum longus
• Warm, “boggy” painful swelling
Subtalar synovitis, peroneal tenosynovitis, sinus tarsi pain
Retrocalcaneal bursitis, superficial bursitis, Haglund’s, Achilles tendinopathy
MTP & IP jts
MSUS-detectable bursae in the RA forefoot are common and appear to be a significant contributory factor to patient-related foot disability independent of disease activity and forefoot deformity.

From: The clinical importance of ultrasound detectable forefoot bursae in rheumatoid arthritis


Figure Legend:
A cross-section of a left forefoot at the level of the metatarsal heads. M1: first metatarsal head; M2: second metatarsal head; M3: third metatarsal head; M4: fourth metatarsal head; M5: fifth metatarsal head; c: control participants; MS: medial sesamoid; LS: lateral sesamoid.
‘Many rheumatological foot problems can be managed by the patient, with judicious advice on footwear and simple orthoses’

so...Hard orthotixit or soft orthotixit?

Root, Kirby, Dananberg, Nigg, Kelly (subtalar neutral, tissue stress, FHL, impact forces, plantar intrinsic muscles and longitudinal arch)

shorter disease duration & younger age (van der Leeden 2011)/functional = hard
fixed deformity = soft
Footwear Advice
• Walking barefoot enables increased forefoot spreading under load
• Habitual barefoot walkers have anatomically wider feet. reduced step/stride length
• Increased cadence
• Flatter foot placement
• Increased knee flexion
• Reduced peak vertical ground reaction force at initial contact
• Habitual barefoot walkers exhibit lower peak plantar pressures and pressure impulses, whereas peak plantar pressures are increased in the habitually shod wearer walking barefoot.

Footwear particularly affects the kinematics and kinetics of gait acutely and chronically. Little research has been completed in older age populations (50+ years) and thus further research is required to better understand the effect of footwear on walking across the lifespan.

A literature search was completed across six databases comprising Medline, EMBASE, Scopus, AMED, Cochrane Library and Web of Science. Fifteen of 466 articles met the predetermined inclusion criteria and were included in the review.

Active Foot Synovitis in Patients With Rheumatoid Arthritis: Unstable Remission Status, Radiographic Progression, and Worse Functional Outcomes in Patients With Foot Synovitis in Apparent Remission

Wechalekar et al 2016

- Disease activity scores that omit foot joints were modest in their ability to capture foot synovitis
- 25–36% of patients in remission had foot synovitis.

A DAS28 score greater than 5.1 implies active disease, less than 3.2 well controlled disease, and less than 2.6 remission
‘In people with systemic diseases, foot problems are complex and often require referral and appropriate multidisciplinary care’
Infection

A case series to describe the clinical characteristics of foot ulceration in patients with rheumatoid arthritis.

- 32 n (52 ulcers)
- Majority located dorsal IP, plantar MTP, medial 1st MTP
- Mean ulcer size was 4.84 x 3.29 mm
- 41 ulcers time to heal 28w (3 remained open)
- Protective sensation was reduced in 25 (68%)

Whilst foot ulcers in RA may be small and superficial, they take a considerable length of time to heal posing an infection risk and threat to health-related quality of life.
What are the predictors of foot ulcers?

Firth et al 2013

Multi-centre case control study

• 83 cases with 112 current ulcers
• mean age 71 years
• disease duration (mean 22 years)
• ABPI, forefoot deformity and loss of sensation predict risk of ulceration
• plantar pressures and joint counts were not significant predictors

Study indicates

• a need to screen patients with RA for peripheral neuropathy and peripheral vascular disease
• implement care to accommodate or surgically correct foot deformity
• educate patients regarding foot health to address risk factors and prevent ulceration.
• Certain DMARDs have clear immunosuppressive properties (e.g. methotrexate, azathioprine), and so can predispose to infections.
• Patients suffering infections therefore require early assessment and, if necessary, antibiotic treatment.
• Occasionally infections are severe and may require the DMARD to be temporarily stopped.
Surgery & DMARDs

Particularly relevant for nail surgery and implications for ulcer healing.
Agreed protocol in Torbay Rheumatology

• **continue all DMARDs in perioperative period for nail surgery** and other elective 'clean surgery' e.g. joint replacements

• **stop all DMARDs if there is evidence of infection** – e.g. infected nail/bed that requires antibiotics or if pus present, post op wound infection requiring antibiotics

• **stop all biologics for perioperative period** - all operations- according to half life (see next slides)
## Surgery & biologics

<table>
<thead>
<tr>
<th>Drug</th>
<th>Trade name</th>
<th>Mechanism</th>
<th>Dosing frequency</th>
<th>Half life</th>
<th>Suggested time off prior to surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abatacept</td>
<td>Orencia</td>
<td>T Cell Therapy</td>
<td>IV 4/52</td>
<td>13-15 days</td>
<td>6 weeks</td>
</tr>
<tr>
<td>Anakinra</td>
<td>Kineret</td>
<td>IL-1</td>
<td>S/C daily</td>
<td>4-6 hours</td>
<td>7 days</td>
</tr>
<tr>
<td>Ustekinumab</td>
<td>Stelara</td>
<td>IL-12/23</td>
<td>S/C 12/52</td>
<td>21 days range 15-32</td>
<td>9 weeks</td>
</tr>
<tr>
<td>Secukinumab</td>
<td>Cosentyx</td>
<td>IL-17</td>
<td>S/C 4/52</td>
<td>27 days range 18-46</td>
<td>12 weeks</td>
</tr>
<tr>
<td>Apremilast</td>
<td>Otezla</td>
<td>PDE4 inhibitor</td>
<td>Oral 30mg BD</td>
<td>9 hours</td>
<td>No evidence to suggest stopping</td>
</tr>
</tbody>
</table>

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</thead>
<tbody>
<tr>
<td>Adalimumab</td>
<td>Humira</td>
<td>Anti TNF</td>
<td>S/C 2/52</td>
<td>14 days</td>
<td>6 weeks</td>
</tr>
<tr>
<td>Etanercept</td>
<td>Enbrel</td>
<td>Anti TNF</td>
<td>S/C 1/52</td>
<td>3-5 days</td>
<td>2 weeks</td>
</tr>
<tr>
<td>Infliximab</td>
<td>Remicade</td>
<td>Anti TNF</td>
<td>IV 8/52</td>
<td>9-10 days</td>
<td>4 weeks</td>
</tr>
<tr>
<td>Certolizumab</td>
<td>Cimzia</td>
<td>Anti TNF</td>
<td>S/C 2-4/52</td>
<td>14 days</td>
<td>6 weeks</td>
</tr>
<tr>
<td>Golimumab</td>
<td>Simponi</td>
<td>Anti TNF</td>
<td>S/C 4/52</td>
<td>10-15 days</td>
<td>6 weeks</td>
</tr>
<tr>
<td>Rituximab</td>
<td>Mabthera</td>
<td>B Cell therapy</td>
<td>IV 6-12/12</td>
<td>19 days (after 2nd dose)</td>
<td>3 months Consider CD19 count</td>
</tr>
<tr>
<td>Tocilizumab IV</td>
<td>Ro-Acemra</td>
<td>IL-6</td>
<td>IV 4/52</td>
<td>13 days (concentration dependent)</td>
<td>4-6 weeks</td>
</tr>
<tr>
<td>Tocilizumab S/C</td>
<td>Ro-Acemra</td>
<td>IL-6</td>
<td>S/C 1/52</td>
<td>13 days (concentration dependent)</td>
<td>4-6 weeks</td>
</tr>
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</table>

There is a paucity of data over use of biologics in the perioperative period and data is often conflicting. BSR guidance for anti-TNFs is to stop 3-5 times the half life prior to surgery. For apremilast there is no data on its use in the perioperative period. Other centres recommend stopping 3 days prior to surgery but there is no good evidence for this.
‘Down below’ stuff

Symptoms
Ultrasound
Exam

Sleep & Relaxation
Nutrition
Relationships

Bloods
X-rays
MRI

Exercise & Movement
Stress
Beliefs
Does your outlook matter?

Optimism and Physical Health: A Meta-analytic Review

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Abstract

Background—Prior research links optimism to physical health, but the strength of the association has not been systematically evaluated.

Purpose—The purpose of this study is to conduct a meta-analytic review to determine the strength of the association between optimism and physical health.

Methods—The findings from 83 studies, with 108 effect sizes (ESs), were included in the analyses, using random-effects models.

Results—Overall, the mean ES characterizing the relationship between optimism and physical health outcomes was 0.17, p < .001. ESs were larger for studies using subjective (versus objective) measures of physical health. Subsidiary analyses were also conducted grouping studies into those that focused solely on mortality, survival, cardiovascular outcomes, physiological markers (including immune function), immune function only, cancer outcomes, outcomes related to pregnancy, physical symptoms, or pain. In each case, optimism was a significant predictor of health outcomes or markers, all p < .001.

Conclusions—Optimism is a significant predictor of positive physical health outcomes.
Reducing *Arthritis Fatigue: Clinical Teams* using cognitive behavioural approaches

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Reducing Arthritis Fatigue: Clinical Teams using cognitive behavioural approaches

RA fatigue is significant
Group CBT works

CBT: link thoughts/feelings driving behaviours → fatigue
• Few teams have a psychologist........
• Can clinical teams deliver this?
• RAFT study, £1.3 million grant from HTA

• 300 randomized patients (allows for attrition)
• 7 centres, 4 consecutive cohorts of $12 = 336$
• Cohort is consented; baseline assess; Usual Care
• Cohort then randomized to join CB course (or not)
• Primary outcome fatigue impact week 26 (2 years FU)
• Full economic analysis

Hewlett et al 2011
In the CBT group, there was a marked improvement in all fatigue measures at 6 weeks, you can see here a reduction in both impact scores, severity and improved coping.
Torbay RAFT roll out

Approx 12 Torbay MDT members (nurses, Ots, Physiotherapist, Podiatrist) to deliver sessions every week for 6 weeks (Sessions 0-6 of 2.5 hours duration) and then a further 2.5 hour session at Week 14. Then to prepare and collate any outcome measures.
Lower limb hydrotherapy gait sessions

"NOW I KNOW WHY LOBSTERS LET OUT THAT JOYFUL SQUEAL WHEN THEY'RE DROPPED IN THE POT" - BART
Physical properties of water that effect physiologic change

- Density and Relative Density
- Buoyancy
- Stability in water and the Metacentric effect
- Viscosity and other resistive forces
- Turbulence and other hydrodynamic forces
- Thermodynamics
- Hydrostatic Pressure
Uses of viscosity and other resistive forces

• Water is about 790 times more viscose than air
• Source of resistance to movement
• Graded progression of resistive exercise
  – Modification of speed of movement,
  – size of the surface area of the moving body or part and
  – breaking surface tension
• Allows for progression of the intensity of the exercise
Most public pools operate in the range from 27°-29°C often too cool for general rehabilitation

Hydrotherapy pool is thermo-neutral (32° - 37°C)
Practical applications:

Buoyancy
- Assist, resist or support movement in the water
- Muscle strengthening
- Joint range of movement
- Reduce joint loading / weight bearing
- Progression of weight bearing
Therapeutic Aims

Individually tailored with

• incremental timed exercises
• Conventional therapies such as orthoses, ECWST, splints where necessary
• Concomitant unsupervised sessions in other suitable pools.
• flexible number of sessions
Clinical practice guidelines for the foot and ankle in rheumatoid arthritis: a critical appraisal

Hennessy, Woodburn and Steultjens 2016

- 24 guidelines searched (only 2 were foot and ankle specific)
- Supporting evidence in the guidelines was low quality overall
- Grades of recommendations predominantly being ‘good clinical practice’ or ‘expert opinion’
Which pathway?
Podiatrists treat foot problems, particularly advising on orthoses that provide more comfort or realign mechanical problems in the feet.

A podiatrist will check circulation, nerve function and overall foot health. Review footwear, gait.

Request specific imaging or review latest blood tests. They will let you know about any potential risks to your foot health and how these can be reduced.

The treatment given by podiatrists ranges from assistance with wound care, the prescription of medication or orthoses, the administration of steroid injections or minor surgery, education and advice about more general foot care.

The Podiatrist will work along with the rheumatology team when planning and giving treatment.
The extensive and invisible nature of the symptoms makes RA difficult and often frustrating to diagnose.

- 4 year average timeframe for diagnosis
- 76% of respondents saw at least three doctors
- 54% had five or more office visits before receiving a diagnosis.
- 70% report symptoms affect their overall quality of life.
- including the ability to exercise or take part in physical activity (77%),
- ability to perform family and/or household duties (71%),
- sleep (68%)
- ability to work (62%).
Population survey of the prevalence, impact and care of foot problems in people with rheumatoid arthritis

Wilson et al 2015

413 responders (56%)

- Mean disease duration was 10 (5-20) years
- 67% had accessed foot care
- Podiatry (73%) [Private sector (54%)]
- Orthotics (69%)
- Orthopaedics (32%)
- Insoles (66%)
- Prescribed footwear (25%)
- Treatment cutaneous lesions (49%)
- Foot surgery (35%)
- Podiatry was the most frequently requested additional service (58%)

‘Further research is required to ... explore the reasons why patients do and do not access foot care. Also as many patients who had accessed care still reported foot problems, the quality of foot care requires further exploration.’
Factors predicting the outcome of customised foot orthoses in patients with rheumatoid arthritis: a prospective cohort study