

Rheumatoid Arthritis Case Study

INTRODUCTION

Each student will have watched the relevant MDT member carrying out their initial assessment on the same newly diagnosed Rheumatoid Arthritis patient.

Videos have included only the major components of the rheumatology exam and not the entire content of each person's assessment.

The assessments were carried out by members of Dr Kane's rheumatology team in AMNCH which consists of doctors, clinical nurse specialist, OT and PT.

All videos are available for all students to view.

2. Summarise the patient history

- 62 year old patient Mrs M presented to A&E with constant joint pain and swelling of the hands, feet and wrists.
- Symptoms ongoing for 6/12, initially intermittent in nature.
- Referral made to Rheumatology team.
- The doctor's video captures details of the initial assessment carried out by the SPR at the **patient's first presentation** to the rheumatology clinic.
- Nursing – the CNS video details the follow up visit the patient makes to the rheumatology clinic **one month** after the doctors visit.
- OT and Physiotherapy – these videos capture details of the assessments carried out by these professionals **3 months** after the initial doctors visit.

Student Question – what is the relevance of the assessments being carried out at different times?

Answer - Initial medical assessment concerned with making and giving the patient a diagnosis. Patient presented with pain and swelling of multiple joints therefore the priority would be to alleviate the pain and swelling and control the inflammation medically before referral on to therapy.

Nursing review at one month to evaluate the effect of the medication on the disease process and see whether symptom control has improved.

Therapy assessments at three months when symptoms are more controlled and patient will be better able to tolerate physical assessments and treatment.

This reflects the pathway of care of patients with RA (see diagram 2 on pg 6).

Student Prompt 1 (5 mins)

1. Outline the main signs and symptoms of RA (5mins).

Answer

RA is the leading cause of chronic inflammatory arthritis (OA is the most common non inflammatory arthritis). RA is a polyarthritis i.e. inflammation of 5 or more joints detected on physical examination. Patients usually present with swelling, tenderness and warmth of multiple joints.

Symptoms: To make a diagnosis of RA patients need to have had pain, swelling and stiffness for > 6 weeks (some other conditions are self limiting).

Signs: Swelling and tenderness especially in the wrists, MCP (metacarpophalangeal jts) and MTP (metatarsophalangeal jts) joints. Joint involvement is symmetrical i.e. if the wrist of one side is effected the wrist on the opposite side is usually involved. Rheumatoid factor is positive in the blood testing of up to 70 – 90% of patients but this is often undetectable in the first few months. These signs help distinguish it from other causes of inflammatory arthritis such as gout or psoriatic arthritis.

Peak age of onset is 25-55 yrs and female to male prevalence of 3:1. The aetiology is multifactorial with genetic factors especially the HLA-DR4 contributing to about 50% of prevalence. Environmental influences are not particularly well understood.

Chronic inflammatory changes occur in the synovial membrane of joints. The hypertrophic synovial membrane is infiltrated with chronic inflammatory cells such as macrophages and T- and B- lymphocytes increasing its thickness. Persistent disease causes a chronic inflammatory response and as the inflammation persists villi of synovium can project into the joint and over the bone ends. This can gradually destroy cartilage and erode the bones contributing to joint destruction. During a flare up patients have increased swelling, this leads to ligamentous laxity, and therefore joints are at risk of subluxation

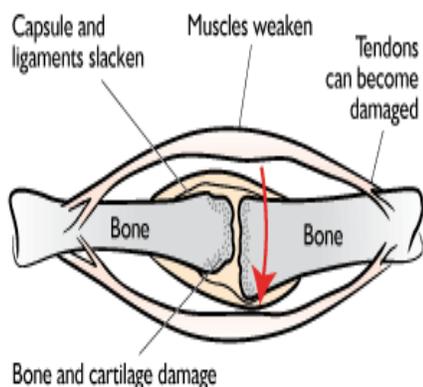


Diagram 1

STUDENT PROMPT 2 (50mins)

Direct students to outline their individual assessment of the patient to the other student members of the MDT. Each profession will show other students their assessment documentation; explain the contents and findings of the assessment and demonstrate tests where appropriate.

(35 mins).

Group discussion.

Ask the students to summarise the main components of each person's assessment highlighting the areas of overlap and the different priorities of each profession.

Areas of overlap in assessments.

Doctor and nursing assessment both address medication, counselling of pts on possible side effects of medication, ensuring side effects are monitored by regular blood testing and that symptom control is adequately addressed by medication.

All professionals routinely ask about symptoms and try to determine which joints are involved in terms of pain, swelling and stiffness. All use the same body chart and count the number of swollen and tender joints. This together with the ESR and a patient VAS of disease severity allow the clinician to calculate the DAS. DAS stands for disease activity score and is a measure of the activity of rheumatoid arthritis. It is the recognised standard in both research and clinical practice and is calculated using a specific formula (see Appendix One).

OT and PT more concerned with the functional impact of the symptoms e.g. effect on walking, dressing, washing etc.

Different priorities of each professions assessment

Medical – Primary aim of assessment is to make correct diagnoses and commence medical management of the condition.

Diagnoses: Patients must have four of seven criteria to make positive diagnoses:

- Morning stiffness at least one hour *
- Swelling in 3 or more joints *
- Swelling in hand joints *
- Symmetric joint swelling *
- Erosions or decalcification on X-rays of hands
- Rheumatoid nodules
- Abnormal serum Rheumatoid Factor

- **Must be present at least 6 weeks**

Other conditions must be ruled out through questioning. Lab tests ordered to confirm subjective and objective exam.

- Rheumatoid Factor
- Full Blood Count
- ESR (Erythrocyte sedimentation rate)
- CRP (C-reactive protein)
- Anti- CCP testing
- HLA antigen testing
- Radiological: Ultrasound, Xrays (hands and feet) – baseline measures

Drug Management:

Patient started on **Methotrexate** (MTX). This is known as a DMARD's disease modifying anti rheumatic drug. This may be first choice if there is evidence of early aggressive disease. It takes about 6 to 8 weeks to work has a favourable toxicity profile and is effective in reducing the signs and symptoms of RA, as well as slowing or halting radiographic damage. This drug controls the symptoms as well as preventing joint damage by controlling the disease.

Because cartilage damage and bony erosions frequently occur within the first two years of disease, rheumatologists now move more aggressively to a DMARD agent early in the course of disease, usually as soon as a diagnosis is confirmed.

Folic acid helps to alleviate some of the side effects of methotrexate such as oral ulcers, alopecia, hair thinning and stomach upset.

Mrs M also takes difene. **Difene** is a NSAID which has a short onset of action and helps improve joint pain and stiffness, but has no effect on disease activity or progression.

Nursing - primary aim of assessment is to determine if the symptoms of the disease have settled with the medications, ensure there are no side effects from the meds and provide counselling on same. Checked joints for swelling and stiffness, questioned about EMS (early morning stiffness), sleeping and walking ability.

Counselling on meds and potential side effects included the following:

Liver disease has not been significant if patients with pre-existing liver disease, alcohol abuse, or hepatic dysfunction are excluded from treatment with methotrexate. Patients are instructed to limit alcohol containing beverages to no more than two per week. CBCs and LFT checked by nurse in clinic.

Interstitial pneumonitis (scarring and fibrosis of the lungs) is a rare but potentially serious complication of methotrexate (<2%), but the nurse should be alert to symptoms of cough or shortness of breath. Refer to doctor and order CXR if suspected.

Lowering of blood counts and bone marrow is also a rare side effect of methotrexate.

Methotrexate is considered a teratogen (any agent that can disturb the growth or development of a foetus); therefore women of childbearing potential or men with partners of childbearing potential must practice effective birth control.

Oral ulcers, mild alopecia and hair thinning, and GI upset may occur and are related to folic acid antagonism. These side effects can be improved with folic acid supplementation

OT- More concerned with the functional impact of the symptoms – how pain, stiffness and swelling can affect the every day activities such as dressing, washing and cooking. Also how symptoms impact on pts hobbies e.g. knitting. Subjective history is similar in OT/PT but OT question more on ADLs and home environment. Physical assessment has again areas of overlap with PT but is concerned primarily with UL symptoms and function.

PT – Assessment primarily aimed at investigating the major symptoms of pain and swelling and what effect these have on the mobility and strength of joints. This includes assessment of all relevant joints including the ULs, LLs, Cx and Lx. The physiotherapist also assesses how these symptoms can impact on function including ADLs similar to the OT but also concentrating on walking and gait. The feet are

specifically assessed as they often develop biomechanical problems that can lead to functional restrictions.

STUDENT PROMPT 3 (20mins)

Outline a MDT treatment plan for Mrs M.

Each student to give a brief outline of their role in the treatment of patients with RA then to tailor it for Mrs M.

Clinical pathway for new Rheumatoid Arthritis patients

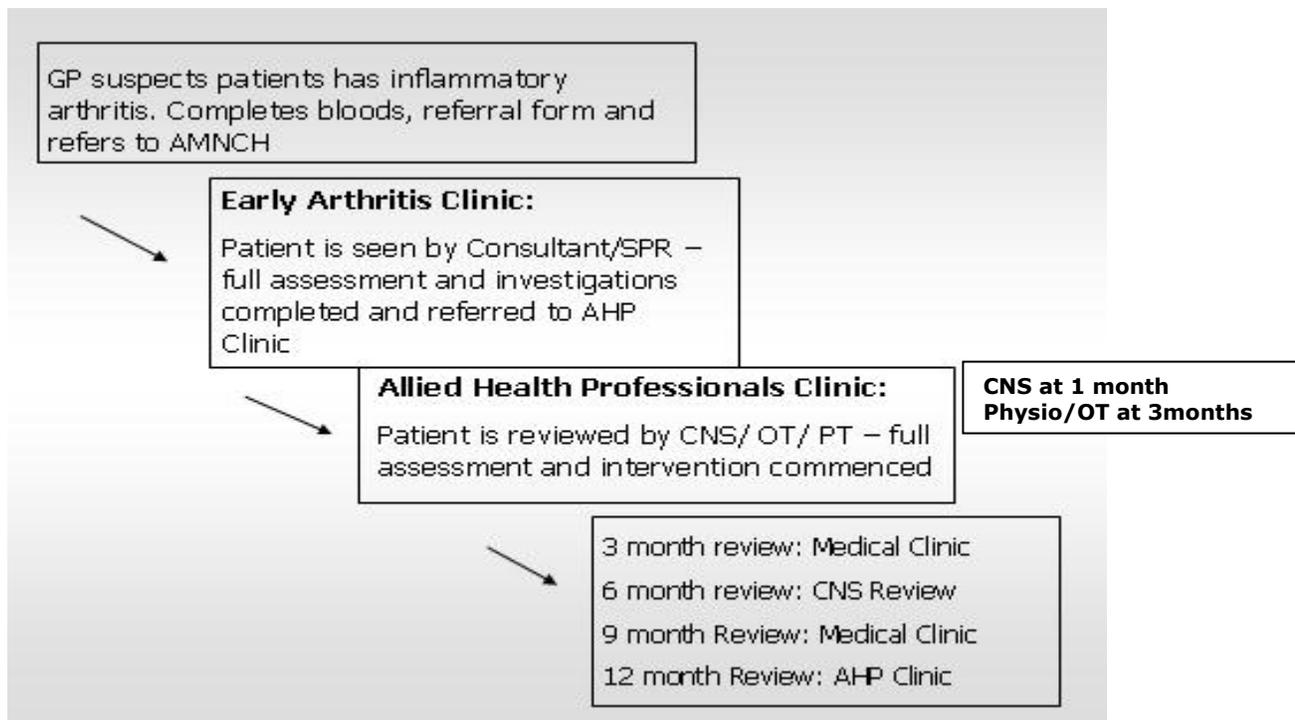


Diagram 2

Medical

- Drug management and disease monitoring
- Arrange for 3 and 9 month review as per pathway.
- Urgent review if flare ups.
- Referral to MDT.

Clinical Nurse Specialist

- Disease Monitoring
- Telephone advice line (pts, GP, relatives, health professionals)
- Urgent review
- Disease Education
- Drug Education

Psychological well-being/ support

Physiotherapy

Hydrotherapy referral made to improve flexibility, strength and general fitness. Benefits of hydro in RA population due to buoyancy and heat effects of water making it easier to exercise when multiple joints involved.

Biomechanical Assessment of the feet as pt c/o foot pain with prescription of devices orthotics if required.

Hand Therapy (in conjunction with Occupational Therapist).

Provide pt with a home exs programme to maintain flexibility in joints.

Musculoskeletal treatment of joint and soft tissues to include manual therapy and exs.

Back Care and posture advice.

Mobility Assessment and prescription of mobility devices - N/A in this case.

Occupational Therapy

Joint Protection - Reduce pain and strain on joints, protect from subluxation and make tasks easier to do
Protect joint structures by splinting if appropriate.

Splinting can reduce pain, decrease inflammation, improve function, increase joint stability by reducing mechanical stresses around the joint and lowering the risk of subluxation.

Energy Management – Educate patient in the following

- Pacing
- Planning
- Prioritising
- Balancing rest and activity
- Organisation of work/storage areas
- Sitting to do tasks
- Avoid staying in one position for long time

Provision of meal preparation and personal care equipment

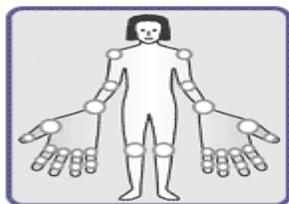
Activities of Daily Living (ADL) assessment and retraining; self care skills, domestic ADL's, community ADL's.



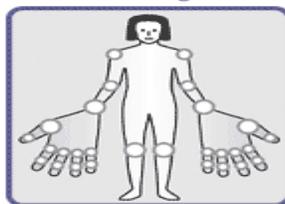
Disease Activity Score (DAS 28)

Joint Status - 28 Joint Count

Tenderness



Swelling



1 Joint Count T_{EN}28 2 Joint Count S_W28

3 ESR (after 1 hour in mm)

4 **General Health** or patient's global assessment of disease activity
How active has your rheumatoid arthritis been during the last 7 days?*

no activity highest activity possible



*Please let patient assess this by drawing a vertical line.

Patient's assessment in mm

Formulas for DAS 28 calculation

$$\begin{aligned}
 & 0,56 \times \sqrt{1 \text{ T}_{EN}28} + 0,28 \times \sqrt{2 \text{ S}_{W}28} \\
 & + 0,70 \times \ln(3 \text{ ESR (after 1 hour in mm)}) + 0,014 \times (4 \text{ Patient's assessment in mm}^2) \\
 & = \underline{\quad}, \underline{\quad} \text{ DAS 28}
 \end{aligned}$$

Evaluation DAS 28

Current DAS 28	DAS 28: Difference to initial value		
	> 1,2	> 0,6 and ≤ 1,2	≤ 0,6
≤ 3,2 Inactive	Good improvement	Moderate Improvement	No Improvement
> 3,2 ≤ 5,1 Moderate	Moderate Improvement	Moderate Improvement	No Improvement
> 5,1 Very active	Moderate Improvement	No Improvement	No Improvement