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Diagnosing joint pain in older people

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FIGURE 1

Osteoarthritis of the knee showing marked joint space reduction, subchondral sclerosis and osteophyte formation

Courtesy of Bruyn GA and the EULAR image database

What are the most common causes?

How should patients be diagnosed?

What are the treatment options?



MUSCULOSKELETAL DISEASE IS THE MOST COMMON CAUSE OF CHRONIC PAIN AND

disability in older people. The prevalence in those over 75 is 83% in the UK.¹ Older adults with arthritis have been reported to make significantly greater use of medical services compared with those without.² Joint pathology may lead to reduced mobility, increased risk of falls, low energy, dependency and depression. Chronic pain itself is strongly associated with psychological distress and fatigue.^{3,4} Overall, arthritis places an enormous burden on the

individual and on society. Therefore, the importance of correctly diagnosing and managing joint pain in the elderly is paramount and the GP is central to this process.

AETIOLOGY

There are many potential causes of joint pain in older patients and, as in all age groups, the presentation may be acute or chronic and involve one or more joints. The most likely aetiology is osteoarthritis (OA). However, the differential diagnosis (see table 1, p18) includes conditions which should not be missed such as septic arthritis and inflammatory disease. Risk factors for

osteoarthritis are listed in table 2, p18.

DIAGNOSIS

The assessment of joint pain begins with a thorough history. This should include:

- presenting symptoms (pain, stiffness, swelling of joints)
- previous joint disease or trauma
- concurrent illness and systemic symptoms i.e. malaise, fever etc
- family history of joint disease (e.g. OA, RA, gout)



Table 1

Differential diagnosis of acute and chronic arthritis

Causes of acute joint pain

- Septic arthritis: *S. aureus*, Group B streptococci, *S. pneumoniae*, Gram-negative organisms (especially in immunocompromised patients)
- Crystal induced arthritis – gout, pseudogout
- Flare of osteoarthritis
- Reactive arthritis (following infection)
- Haemarthrosis
- Intra-articular injury (fracture, meniscal tear, osteonecrosis)
- Systemic disease
 - Inflammatory e.g. rheumatoid arthritis, SLE, polymyalgia rheumatica
 - Malignancy (paraneoplastic)

Causes of chronic joint pain

- Osteoarthritis
- Crystal associated arthritis e.g. gout, pseudogout, Milwaukee shoulder
- Rheumatoid arthritis
- Seronegative spondyloarthropathy e.g. psoriatic arthritis
- Remitting seronegative symmetrical synovitis with pitting oedema (RS3PE)
- Joint related conditions such as tendinitis/tendinosis, tendon rupture, ligamentous sprain/strain, bursitis

Table 2

Risk factors for OA

Age
Gender (female>male)
Family history
Occupation
Previous injury
Obesity
Joint laxity

Practical tip

An acutely swollen painful joint is infected until proven otherwise.

INVESTIGATIONS

In straightforward cases of OA no specific investigations are required (see following practical tip). If doubt exists, however, tests may be necessary including FBC, ESR and CRP, uric acid for suspected gout and radiographs of the affected joints especially following trauma, or pseudogout. Radiographs may also be helpful in distinguishing between hand OA and RA.⁷

Rheumatoid factor and ANA may be useful in cases of suspected inflammatory arthritis.

Joint radiographs are done in advanced cases before considering joint replacement (see figure 1, p17).

Chondrocalcinosis is seen in the affected joint in cases of pseudogout (see figure 2, left).

Practical tip

The EULAR recommendations for the diagnosis of knee OA state that a confident diagnosis can be made based on three symptoms (knee pain, short-lived morning stiffness and functional limitation) and three signs on knee examination (crepitus, restricted movement and bony enlargement) without a requirement for imaging. Other investigations are recommended only if atypical pathology is suspected.⁸

Synovial fluid should always be obtained in an acute monoarthritis. Fluid should be sent for Gram staining, culture and crystal analysis. Septic arthritis may co-exist with gout/pseudogout.

If septic arthritis is suspected, the patient should be assessed for sources of infection (e.g. chest radiograph, blood and urine cultures). A specialist orthopaedic or rheumatological

FIGURE 2
Chondrocalcinosis in pseudogout of the knee



Courtesy of Manger Band and the EULAR image database

- medication use (diuretics in case of gout)
- other risk factors such as travel, sexual history, diet, tick bites
- occupational history
- alcohol

The pattern of joint involvement points to the diagnosis. Bilateral symmetrical small joint pain, swelling and stiffness should arouse the suspicion of rheumatoid arthritis. The wrist and knee are commonly affected

by pseudogout and the first metatarsophalangeal joint or knee joint involvement may represent gout. Stiffness in the shoulder and hip girdles, worse in the morning, suggests polymyalgia rheumatica.

The physical examination should focus on the involved joint(s) and surrounding area, as well as a general examination to screen for other affected joints and for potential systemic manifestations of disease.^{5, 6}

opinion should be sought in all cases of septic arthritis because of the significant morbidity and mortality associated with this condition.⁹

MANAGEMENT

The management of arthritis in the elderly depends upon the underlying pathology and may differ from that of younger patients because of an increased prevalence of comorbidities.

Osteoarthritis

NICE guidelines advise that treatment of OA should take into account an individual's needs, risk factors, and preferences. Patients with OA should be offered education, advice and access to information about their condition as well as strengthening exercises and aerobic fitness training (if physically possible). If the patient is overweight, weight loss is critical, especially in OA of the knee.

Paracetamol and topical NSAIDs are the first-line pharmacological treatments. Other useful medications include topical capsaicin, oral NSAIDs, intra-articular corticosteroids and opioids. All of these, however, may be associated with a degree of toxicity.

Intra-articular corticosteroids e.g. methylprednisolone and triamcinolone acetate are useful for OA in the short term for pain relief and increased range of movement. They can be administered every 3-4 months but there are no long-term data on the effect of the steroids on articular cartilage.

Non-pharmacological interventions

such as heat and cold applications and TENS may be helpful but have a weaker evidence base.¹⁰ Glucosamine sulphate has shown some clinical effectiveness in the treatment of knee OA, however, its cost-effectiveness has not been conclusively demonstrated.¹¹

Practical tip

Referral to physiotherapy services should be made early in most cases of OA and a rheumatological opinion should be sought if there is doubt about the diagnosis, or the need for invasive procedures.

Rheumatoid arthritis

Elderly onset RA (EORA: age of onset >60 years) has been reported to differ from younger onset RA (YORA) in the following ways, EORA has:

- a more balanced gender distribution
- a higher frequency of acute onset, especially in rheumatoid factor (RF) negative patients
- an association with systemic features
- more frequent involvement of the shoulder girdle
- higher disease activity.¹²

Some cases of seronegative RA and polymyalgic onset RA, however, represent a different subtype with milder disease.¹³ It is recommended that therapy for EORA should be tailored according to disease activity, with the aim of achieving clinical remission or the lowest possible level of disease activity. Comorbidities and drug toxicity profiles are major

considerations when choosing the most suitable therapy for EORA patients.¹⁴

Practical tip

Refer all patients with suspected inflammatory arthritis urgently to a specialist.

Disease modifying anti-rheumatic drug (DMARD) therapy should be used according to disease severity, as in YORA. The current approach is for early, intensive intervention with combination therapy.¹⁵ However, the possible reduction in the functional capacity of bone marrow, liver and kidney noted in the elderly is of particular importance as these drugs have the potential for serious toxicity. Furthermore, strict adherence to a drug regimen is necessary and careful monitoring, both clinical and laboratory, is required.¹⁴ The commonly used DMARDs in the elderly include hydroxychloroquine, sulfasalazine and methotrexate, see table 3, below.

Corticosteroids may be very effective in the elderly, however, prolonged use and/or high dosage may lead to marked toxicity especially osteoporosis and diabetes. Thus, careful consideration of dose and indication is essential when corticosteroids are prescribed to elderly patients. Intra-articular corticosteroids may be beneficial and are extremely safe.

Several studies indicate that, when disease activity, disease duration and

Table 3

Commonly used DMARDs in older patients

DMARD	Dose	Time until effect	Side effects	Cautions and contraindications	Monitoring
Methotrexate	7.5-25 mg/week orally, IM or SC	6-12 weeks	Dyspepsia, stomatitis, cough, diarrhoea, anorexia, alopecia, bleeding or bruising, fever, pneumonitis, increased nodulosis	Bone marrow suppression, hepatic and pulmonary disease, alcoholism, immunodeficiency, active infection, pregnancy, concomitant trimethoprim	FBC, LFTs fortnightly. Once stable dose, 4-8 weekly
Sulfasalazine	2-3 g/day orally in 2-3 divided doses	2-3 months	GI upset, diarrhoea, dizziness, headache, rash including photosensitivity, anorexia, abnormal liver function, neutropaenia	Allergy to sulfa drugs, renal or hepatic disease, blood dyscrasias	Monthly FBC, LFTs until stable dose then 3 monthly
Hydroxychloroquine	200-400mg/day orally (<7 mg/kg body weight)	2-3 months	Diarrhoea, anorexia, alopecia, nausea, rash, retinopathy, neuromyopathy	Allergy to antimalarials, retinal abnormality, G6PD deficiency, pregnancy	Yearly optometrist review of vision

key points

SELECTED BY

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There are many potential causes of joint pain in older patients. The most likely aetiology is osteoarthritis. However, the differential diagnosis includes conditions which should not be missed such as septic arthritis and inflammatory disease.

The pattern of joint involvement points to the diagnosis. Bilateral symmetrical small joint pain, swelling and stiffness should arouse the suspicion of rheumatoid arthritis. The wrist and knee are commonly affected by pseudogout and the first metatarsophalangeal joint or knee joint involvement may represent gout. Stiffness in the shoulder and hip girdles, worse in the morning, suggests polymyalgia rheumatica.

In straightforward cases of OA no specific investigations are required. If doubt exists, however, tests may be necessary including FBC, ESR and CRP, uric acid for suspected gout and radiographs of the affected joints especially following trauma, or pseudogout.

Patients with OA should be offered education, advice and access to information about their condition as well as strengthening exercises and aerobic fitness training (if physically possible). If the patient is overweight, weight loss is critical, especially in OA of the knee. Paracetamol and topical NSAIDs are the first-line pharmacological treatments. Other useful medications include topical capsaicin, oral NSAIDs, intra-articular corticosteroids and opioids. All of these, however, may be associated with a degree of toxicity.

Elderly onset RA differs from younger onset RA in the following ways: a more balanced gender distribution; a higher frequency of acute onset; an association with systemic features; more frequent involvement of the shoulder girdle and higher disease activity. DMARD therapy should be used according to disease severity, as in younger onset RA. The current approach is for early, intensive intervention with combination therapy. Corticosteroids may be very effective in the elderly, however, prolonged use and/or high dosage may lead to marked toxicity especially osteoporosis and diabetes. Ischaemic heart disease is the leading cause of death in the RA population and RA is an independent risk factor for the development of coronary artery disease.

During an acute attack of gout, the BSR guidelines recommend resting the affected joint and the use of NSAIDs or colchicine if tolerated. In pseudogout, NSAIDs and intra-articular steroids are helpful to reduce the inflammation and shorten the duration of acute episodes.

comorbidities are taken into account, elderly RA patients have a significantly lower chance of receiving anti-TNF α therapy within the same time period as younger patients despite fulfilling NICE criteria.^{16,17} However biologic therapy should not be denied to patients who require it, purely on the basis of age as studies have shown that these drugs are safe and cost-effective in the elderly.¹⁸

Ischaemic heart disease is the leading cause of death in the RA population and RA is an independent risk factor for the development of coronary artery disease.¹⁹ Therefore, cardiovascular risk factors must be monitored at least annually in these patients and managed according to local guidelines.²⁰

Crystal associated arthritis

Gout: During an acute attack, the British Society for Rheumatology (BSR) guidelines recommend resting the affected joint and the use of NSAIDs or colchicine if tolerated. Corticosteroids (oral, intramuscular or intra-articular) may be used if there are contraindications to the aforementioned drugs. Recurrent attacks of gout can lead to destruction of the joint (see figure 3, opposite) and hence it is important to prevent them.

Practical tip

Assess lifestyle factors, blood pressure, renal function, serum urate and glucose in all patients with gout. Optimise weight, increase exercise, advise dietary modifications, reduce alcohol intake and increase fluid intake in all patients.

Recurrent attacks should be prevented by urate-lowering therapy (allopurinol – titrate dose up to 900mg/day depending on serum urate level). Allopurinol should not be instituted during an acute attack and another agent e.g. an NSAID, should be given concurrently to avoid the risk of disease flare. In the case of intolerance to allopurinol or inefficacy, referral to a rheumatologist is recommended.²¹

Pseudogout: NSAIDs and intra-articular steroids are helpful to reduce the inflammation and shorten the duration of acute episodes.

Practical tip

NSAIDs should be used at a reduced dose for the shortest possible time in

the elderly because of the increased risk of hepatotoxicity, renal impairment and gastric irritation. Drug interactions should be considered especially with diuretics and antihypertensives. Gastric protection therapy should be co-administered.¹⁴

Polymyalgia rheumatica

Prednisolone 15 mg daily is recommended as the initial dose for treatment of straightforward polymyalgia rheumatica (PMR). This should be continued for 3 weeks followed by tapering to 12.5 mg daily for 3 weeks and then 10 mg for 4-6 weeks. Then a reduction by 1 mg every 4-8 weeks can be made.

The use of bone-protective therapy is also indicated. An extensive discussion of PMR is beyond the scope of this article however the recent BSR guidelines cover management of this condition.²²

Practical tip

Early specialist referral is indicated in the case of atypical features at presentation, and when there is incomplete, poorly sustained or no response to corticosteroids.

Soft tissue disease

There is some evidence to support the use of physiotherapy for rotator cuff disease and other tendinopathies.²³ If symptoms persist, referral for further management is warranted such as intra-articular/bursal/tendon sheath corticosteroid injections. In addition, referral to occupational therapy may

FIGURE 3

Erosion of the first metatarsophalangeal joint and soft tissue swelling in gout



Courtesy of Grassi W and the EULAR image database

be needed for joint protection, adaptive devices and assessment for safe daily living.

CONCLUSION

The management of joint pain in the elderly requires a rapid diagnosis followed by treatment tailored to the individual. Comorbidities and concomitant medications must be taken into account when prescribing, however therapy should not be withheld based on age alone. The GP is ideally suited to offering a holistic management approach to the patient to help reduce the social and economic burden of joint disorders in the elderly population.

REFERENCES

- 1 Donald IP, Foy C. A longitudinal study of joint pain in older people. *Rheumatology* 2004; 43:1256-1260
- 2 Dunlop DD, Manheim LM, Song J et al. Health care utilization among older adults with arthritis. *Arthritis Rheum* 2003; 49(2):164-71
- 3 Magni G, Caldieron C, Rigatti-Luchini S et al. Chronic musculoskeletal pain and depressive symptoms in the general population: an analysis of the First National Health and Nutrition Examination Survey Data. *Pain* 1990; 43: 299-307
- 4 McBeth J, McFarlane GJ, Hunt IM et al. Risk factors for persistent widespread pain: a community-based study. *Rheumatology* 2001; 40: 95-101
- 5 Baker DG, Schumacher HR Jr. Acute monoarthritis. *N Engl J Med* 1993; 329: 1013-20
- 6 Siva C, Velazquez C, Mody A et al. Diagnosing acute monoarthritis in adults: a practical approach for the family physician. *Am Fam Phys* 2003; 68: 83-90
- 7 Zhang W, Doherty M, Leeb BF et al. EULAR evidence-based recommendations for the diagnosis of hand osteoarthritis: report of a task force of ESCISIT. *Ann Rheum Dis* 2009; 68: 8-17
- 8 Zhang W, Doherty M, Peat G et al. EULAR evidence-based recommendations for the diagnosis of knee osteoarthritis. *Ann Rheum Dis* 2009 Sep 17. [Epub ahead of print]
- 9 Visser S, Tupper J. Septic until proven otherwise: approach to and treatment of the septic joint in adult patients. *Can Fam Phys* 2009, 55(4): 374-5
- 10 National Institute for Health and Clinical Excellence. CG 59. Care and management of osteoarthritis in adults. NICE. London. 2008
- 11 Black C, Clar C, Henderson R et al. The clinical effectiveness of glucosamine and chondroitin supplements in slowing or arresting progression of osteoarthritis of the knee: a systematic review and economic evaluation. *Health Technol Assess* 2009; 13(52): 1-148
- 12 Bajocchi G, La Corte R, Locaputo A et al. Elderly onset rheumatoid arthritis: Clinical aspects. *Clin Exp Rheumatol* 2000; 18 (Suppl 20):S49-50
- 13 Villa-Blanco JI, Calvo-Alén J. Elderly onset rheumatoid arthritis: differential diagnosis and choice of first-line and subsequent therapy. *Drugs Aging* 2009; 26 (9):739-50
- 14 Fleming A. Drug management of arthritis in the elderly. *J Roy Soc Med* 1994; 87 (Suppl 23): 22-25
- 15 National Institute for Health and Clinical Excellence. CG 79. Rheumatoid arthritis: The management of rheumatoid arthritis in adults. NICE. London. 2009
- 16 Radovitz BJ, Franssen J, Eijsbouts A et al. Missed opportunities in the treatment of elderly patients with rheumatoid arthritis. *Rheumatology* 2009;48: 906-910
- 17 Tutuncu Z, Reed G, Kremer J et al. Do patients with older-onset rheumatoid arthritis receive less aggressive treatment? *Ann Rheum Dis* 2006; 65(9):1226-9
- 18 Schneeweiss S, Setoguchi S, Weinblatt ME, et al. Anti-tumor necrosis factor alpha therapy and the risk of serious bacterial infections in elderly patients with rheumatoid arthritis. *Arthritis Rheum* 2007;56 (6):1754-1764
- 19 Kumar N, Armstrong DJ. Cardiovascular disease - the silent killer in rheumatoid arthritis. *Clin Med* 1998; 8 (4): 384-387
- 20 Peters MJ, Symmons DP, McCarey D, et al. EULAR evidence-based recommendations for cardiovascular risk management in patients with rheumatoid arthritis and other forms of inflammatory arthritis. *Ann Rheum Dis* 2009 Sep 22 doi:10.1136/ard.2009.113696
- 21 Jordan KM, Cameron JS, Snaith M et al. British Society for Rheumatology and British Health Professionals in Rheumatology guideline for the management of gout. *Rheumatology* 2007;46(8):1372-4
- 22 Dasgupta B, Borg FA, Hassan N et al. BSR and BHPH guidelines for the management of polymyalgia rheumatica. *Rheumatology* 2010;49(1): 186-90
- 23 Green S, Buchbinder R, Hetrick S. Physiotherapy interventions for shoulder pain. *Cochrane Database Syst Rev* 2003; (2): CD004258

Useful information

National Rheumatoid Arthritis Society
www.nras.org.uk

Arthritis Care
www.arthritiscare.org.uk

Arthritis Research Campaign
www.arc.org.uk

Arthritis and Musculoskeletal Alliance
www.arma.uk.net