The burden of musculoskeletal conditions

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Abstract

Musculoskeletal conditions (MsCs) are a major burden to the individual, society and the health service. One in five of all general practitioner consultations involves a patient with an MsC. The main consequences of MsCs are chronic pain and physical disability. Back pain is the most common type of musculoskeletal pain. The most common form of inflammatory arthritis is rheumatoid arthritis, and the most common form of non-inflammatory arthritis is osteoarthritis. MsCs can affect individuals of any age and sex. The prevalence of MsCs is higher in women than men and rises with age. The prevalence of certain MsCs can be influenced by ethnicity, lifestyle factors and genetic predisposition. MsCs are among the most commonly reported causes of work-related ill-health. The costs of MsC include those to healthcare services and to society, as well as indirect costs. Rheumatoid arthritis alone costs the UK economy £3.8–4.8 billion per year. The burden of MsCs is high, and the impact of these conditions on the health service and society will continue to rise as life expectancy increases.

Keywords Cost; disability; epidemiology; incidence; morbidity; mortality; MRCP; musculoskeletal; prevalence; rheumatic; risk factors

Introduction

The term 'musculoskeletal conditions' (MsCs) encompasses a wide range of conditions that affect the muscles, bones, soft tissue, joints and spine. All ages are affected, from the very young to those in extreme old age. Together, MsCs are a major burden to the individual, society and health services.

MsCs can be grouped according to the region of the body affected (e.g. back pain, neck pain, knee pain); according to whether they are inflammatory (e.g. rheumatoid arthritis (RA), gout) or non-inflammatory (e.g. osteoarthritis (OA), osteoporosis); or according to whether the condition is confined to the musculoskeletal system or generalized (e.g. systemic lupus erythematosus (SLE), other connective tissue diseases).

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Key points

- Musculoskeletal conditions (MsCs) are a major burden to the individual, society and the health service
- Around 21% of the adult population consults their GP each year about an MsC
- Although all ages can be affected, the prevalence is higher in female patients and rises with age
- MsCs are the most common cause of work-related illness and the second most common cause of loss of time from work in the UK

Occurrence

Estimates of the number and type of cases of the different MsCs are useful in healthcare planning, although these estimates differ depending on which level of care is assessed. For example, non-specific musculoskeletal pain such as back pain accounts for a greater proportion of the healthcare burden at the community level than at the general practice or the hospital sector level.

Incidence

There are no recent estimates of the incidence of all MsCs combined. In 2001 the number of new presentations of musculoskeletal disease in general practice in the UK was 947 per 10,000 persons but differed between the sexes: 832 per 10,000 for males, 1057 per 10,000 for females.[1] Most new musculoskeletal consultations in the UK were for self-limiting conditions (soft tissue rheumatism, chronic widespread pain, arthralgia). Among persistent conditions, new presentations of OA were 10 times more common than those for RA (Figure 1). In 2006–2009, the self-reported incidence of work-related MsCs was 670 per 100,000, and the general practitioner (GP)-reported incidence was 684 per 100,000.

Prevalence

In any one year, 20% of the adult population consult their GP with an MsC. The most recent data on the prevalence of MsCs come from the Consultations in Primary Care Archive database, based in the West Midlands, UK.[2] The overall prevalence of MsCs in 2010 was 1967 per 10,000 in primary care only, and 2143 per 10,000 in primary and secondary care combined. Back pain was the condition most commonly reported (Figure 2). The prevalence of all MsCs combined increased with age, from 5% in those aged <15 years to >31% in those aged >50 years, and was higher among women.

In 2016, 18% of the UK population was aged 65 years and older.[3] This is expected to increase to 24% by 2041, and, in turn, the proportion of people of working age will decrease. With increasing life expectancy, the prevalence of MsCs can be expected to increase, leading to a rise in consultation rates and GP workloads, and an increase in demand for services, especially from elderly patients.

Results from the 2011 General Lifestyle Survey suggested that 7.1 million UK adults (13.9%) – 2.8 million men and 4.3 million women – reported having a long-standing condition relating to the musculoskeletal system.

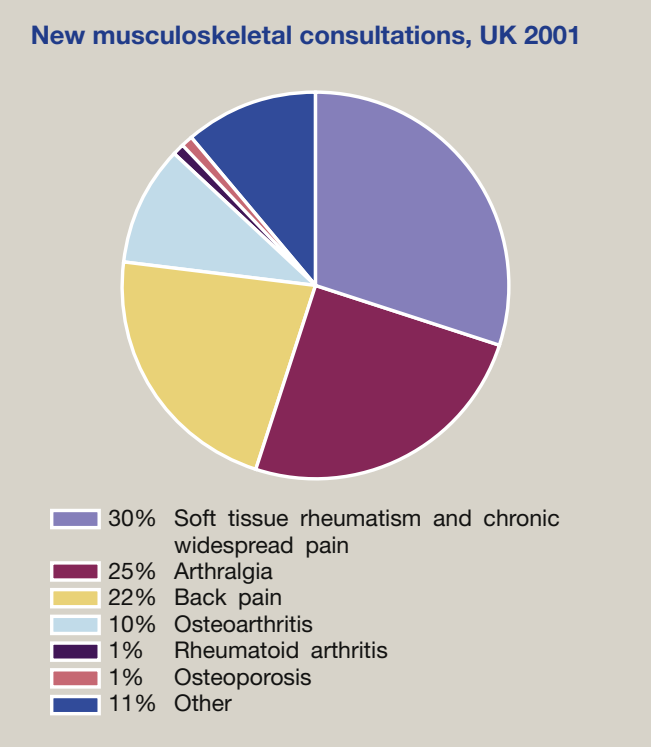

Figure 1 From the General Practice Research Database 2001.[1]

Mortality

Owing to the long-term nature of MsCs, they can be underreported on death certificates as an underlying cause of death. In the UK in 2015, there were 4559 deaths (1539 in male patients, 3020 in female patients) attributed to diseases of the musculoskeletal system and connective tissue.[3] There is a variation in which International Classification of Diseases codes are used to classify deaths attributed to MsCs in the UK. In Scotland in 2015, 34% of musculoskeletal deaths were attributed to RA or OA. The equivalent figure for Northern Ireland was 31%. In England and Wales, 19% of deaths were attributed to RA and juvenile arthritis (figures for OA were not available).

Some MsCs are associated with premature mortality caused by associated co-morbidity. There is compelling evidence for an association between early mortality from cardiovascular disease and RA, and some evidence for an association with other forms of inflammatory arthritis. However, improved and more aggressive treatment of inflammatory arthritis in recent years seems to be leading to a decline in cardiovascular mortality.

Cost

MsCs have an extensive economic impact. Direct costs of MsCs include those borne by the healthcare services, such as drugs, physiotherapy, GP attendances, hospital referrals/admissions and surgery. In the 2014–2015 financial year, the costs of patient admissions for MsCs were £4.1 billion.[4]

Costs to society include disability pensions and incapacity benefits. Some societal costs, such as loss of employment, productivity or early retirement, are indirect and difficult to quantify. Finally, there is the cost to the individual, their friends and their family. This includes time spent attending appointments and providing informal care and transport costs.

Each year, approximately 31.6 million prescriptions (single items on a prescription form) are dispensed for musculoskeletal and joint diseases, and drugs affecting bone metabolism in England and Wales. In the 2014–15 financial year, the National Health Service funded just over 145,000 major hip and knee procedures, costing approximately £977 million. A large proportion of these were joint replacements. In the same year, in

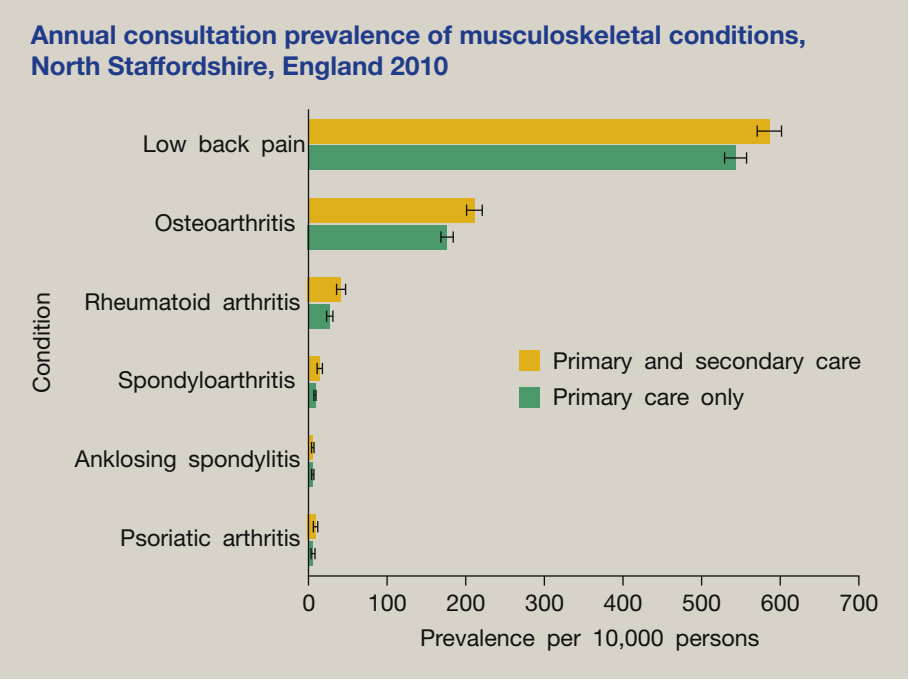

Figure 2 From the Consultations in Primary Care Archive database, West Midlands, UK.

England there were just under 160,000 inpatient and 1.7 million outpatient attendances for the specialty of rheumatology, and 1.2 million inpatient and 7.6 million outpatient attendances for the specialty of trauma and orthopaedics.[5] The annual hospital costs of hip fractures are approximately £1.9 billion; and the direct and indirect annual costs of RA and ankylosing spondylitis have been estimated to be around £3.8 billion each.

MsCs are the most common cause of work-related illness and the second most common cause of loss of time from work in Great Britain. The Labour Force Survey for the 2015–2016 financial year found that >2.3 million people in the UK reported having an MsC as their major health condition, and that 8.8 million working days were lost because of musculoskeletal disorders. In 2016, 13% of incapacity claims and 14% of claims for Employment and Support Allowance were for MsCs.

Disability associated with musculoskeletal disease

The main consequences of having a musculoskeletal disease are chronic pain and disability. In 2010, MsCs accounted for 30.5% of all years lived with disability in the UK.

The Personal Independence Payment (PIP)) is available to individuals <65 years of age who have a long-term health condition or disability. In January 2017, people suffering from MsCs accounted for 35% of those receiving PIP payments. Among musculoskeletal claims, 18% were for inflammatory arthritis, including RA, 22% for OA, 19% for back pain and 14% for chronic pain syndromes.

Risk factors for musculoskeletal disease

MsCs are generally more common in women and increase in frequency with age. Some conditions, such as RA, primary generalized OA and gout, tend to run in families, which could be the result of genetic predisposition and/or shared environmental risk factors.

There is some variation in the frequency of MsCs between ethnic groups. For example, the prevalence of RA is lower in people of Pakistani and Afro-Caribbean origin than in Caucasian individuals. People of African-American descent have a higher prevalence of severe knee OA than Caucasians. Compared with women of white European origin, women of Asian and Afro-Caribbean origin have a higher prevalence of SLE. Ethnicity can interact with socioeconomic status. For example, in the USA, rates of hip OA among African-American men are higher than in Caucasian men only in the lowest socioeconomic status group.

Obesity is a major risk factor for some MsCs, including OA, gout and RA. The rise in obesity is contributing to the increase in prevalence of OA. Smoking is a risk factor for osteoporosis and RA.

Individuals living in deprived areas (determined by postcode of residence) are more likely than those in more affluent areas to report back pain. ◆

KEY REFERENCES

1 Medicines and Healthcare products Regulatory Agency the general practice research database. 2001, http://www.gprd.com.

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4 Department of Health. Reference costs 2015–2016. 2016. Available at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/577083/Reference_Costs_2015-16.pdf. [Accessed 6 July 2017].

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FURTHER READING

Murray CJ, Richards MA, Newton JN, et al. UK health performance: findings of the Global Burden of Disease Study 2010. *Lancet* 2013; **381:** 997–1020.

TEST YOURSELF

To test your knowledge based on the article you have just read, please complete the questions below. The answers can be found at the end of the issue or online here.

Question 1

A 48-year-old woman was examined for the purposes of life insurance. Twenty years previously, she had been found to have rheumatoid arthritis, and although she had been treated with disease-modifying agents, she had significant residual deformity. She was otherwise well and had no other significant past history. She was a life-long non-smoker and drank less than 3 units/week.

Which non-musculoskeletal process is most closely associated with premature mortality in these circumstances?

A Neoplasia
B Atheroma formation
C Fibrosis
D Acute inflammation
E Glucose intolerance

Question 2

A 55-year-old woman presented with a 3-month history of aching in the small joints of the hands and in the right knee. She had also been feeling more tired than usual. She had no previous significant medical history. She was of Afro-Caribbean background but had lived in the UK all her life.
On clinical examination, there was tenderness but only minimal swelling in the hands, but the right knee was clearly swollen.

In what way does her ethnic background influence the differential diagnosis compared with a woman of the same age of North European descent?

A She is more likely to have systemic lupus erythematosus
B She is less likely to have osteoarthritis
C She is more likely to have rheumatoid arthritis
D She is less likely to have gout.
E She is more likely to have joint sepsis

Question 3

A healthcare commissioning body is assessing the allocation of funding for chronic inflammatory joint disease.

Which of the following is the most appropriate data source in the UK for the prevalence of rheumatoid arthritis?

A Published data from the USA
B International Classification of Diseases (ICD)
C Prescription data
D General practice consultations
E Patient self-help groups