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Influences on the decision to use an osteoarthritis diagnosis in primary care: a cohort study with linked survey and electronic health record data

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SUMMARY

Objective: Clinicians may record patients presenting with osteoarthritis (OA) symptoms with joint pain rather than an OA diagnosis. This may have implications for OA research studies and patient care. The objective was to assess whether older adults recorded with joint pain are similar to those with a recorded OA diagnosis.

Method: A study of adults aged ≥50 years in eight United Kingdom general practices, with electronic health records linked to survey data. Patients with a recorded regional OA diagnosis were compared to those with a recorded joint pain symptom on socio-demographics, risk factors, body region, pain severity, prescribed analgesia, and potential differential diagnoses. A sub-group was compared on radiographic knee OA.

Results: Thirteen thousand eight hundred and thirty-one survey responders consented to record review. One thousand four hundred and twenty-seven (10%) received an OA ($n = 616$) or joint pain ($n = 811$) code with wide practice variation. Receiving an OA diagnosis was associated with age (75+ compared to 50–64 OR 3.25; 95% Credible intervals (CrI) 2.36, 4.53), obesity (1.72; 1.22, 2.33), and pain interference (1.45; 1.09, 1.92). Analgesia management was similar. Radiographic OA was common in both groups. A quarter of those with a joint pain record received an OA diagnosis in the following 6 years.

Conclusion: Recording OA diagnoses are less common than recording a joint pain symptom and associated with risk factors and severity. OA studies in primary care need to consider joint pain symptoms to understand the burden and quality of care across the spectrum of OA. Patients recorded with joint pain may represent early cases of OA with need for early intervention.

Introduction

In the UK, the initial presentation and management of osteoarthritis (OA) most commonly occurs within primary care. The UK National Institute for Health and Care Excellence (NICE) guidance recommends application of a working diagnosis of OA in adults 45 years and older presenting with persistent joint pain, not associated with lasting morning stiffness, but excluding those with atypical features of OA[1]. EULAR guidelines recommend making a diagnosis of knee OA based on knowledge of the underlying population prevalence and the presence of patient risk factors for OA, their symptoms, and physical examination[2]. Whilst both guidelines infer that an OA diagnosis can normally be made without recourse

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to further investigation, there are likely to be instances of diagnostic uncertainty.

In primary care, health-related information including diagnosis is typically electronically recorded and coded. In the UK the most common system used is the Read code classification[3] which allows health care professionals to label a presenting complaint with a symptom or disease-based Read code. Thus, OA-related symptoms may be categorised as joint pain codes rather than as an OA diagnosis. A study assessing the completeness of recorded diagnoses in primary care found a low sensitivity of 63% for OA, with a major reason being use of alternative codes, such as knee pain, by clinicians[4]. Even accounting for patients not seeking health care, there appears to be a wide discrepancy between the estimates of self-reported symptomatic OA and the prevalence of primary care recorded OA diagnosis. In the UK, it has been estimated that 53% of older adults report chronic joint pain, and 22% severe disabling pain[5], but only 13% of older adults in the same geographical region received an OA diagnosis over a 7 year period[6]. A study in Sweden found only 63% of those with symptomatic knee OA had a recorded knee OA diagnosis within an 8 year period[7]. A prior study of ours showed there may be 10 years between recording of initial symptoms of knee pain and a recorded OA diagnosis in primary care[8]. The threshold for diagnosing and subsequently coding OA is likely to be variable, dependent on, for example, the individual practitioner's personal preference in coding, perceived reaction of the patient to receiving an OA diagnosis, or extent of uncertainty in diagnosis and wish for further confirmation such as radiographic evidence.

Understanding the spectrum of OA that is captured by a diagnosis code is important for several reasons. Primary care records are increasingly being used as a sampling frame for recruitment to trials and cohort studies, and to estimate morbidity prevalence and incidence in order to direct future health service planning[9]. Excluding older patients with joint pain symptom codes may result in selective populations in studies of OA, and under-estimated consultation prevalence and incidence of OA that has been shown in both the UK and Sweden[6,10]. There is also some evidence that those recorded with a joint pain symptom rather than an OA diagnosis have different patterns and quality of care[11].

The objective of this study was first to assess, within a cohort with linked self-report and medical record information, whether older adults with a recorded joint pain symptom in primary care have similar risk factors and pain characteristics, management, and existence of potential alternative diagnoses as those with a recorded OA diagnosis. The hypotheses tested are described in Box 1, with the underlying null hypothesis that only the recording practices of clinicians differentiates those with an OA diagnosis and those with a joint pain symptom record. The second objective was to determine the percentage of older adults recorded with a joint pain symptom who had a recorded OA diagnosis within the next 6–7 years.

Box 1

Hypotheses tested to assess the assumption that older patients with a recorded OA diagnosis and those with a joint pain symptom record are a homogenous group

People aged 50 and over with a non-specific joint pain symptom record differ from those with a recorded OA diagnosis only by recording practice by clinicians and not by:

i) distribution of perceived risk factors (age, gender, socio-economic status, obesity, anxiety/depression)
  - The alternative hypothesis is that an OA diagnosis is more likely to be given to patients who have recognised risk factors for OA.

ii) reporting of more severe symptoms and radiographic evidence
  - The alternative hypothesis is that an OA diagnosis is given to patients with more severe symptoms and radiographic features.

iii) recorded body region (knee, hip, hand/wrist, foot/ankle)
  - The alternative hypothesis is that an OA diagnosis is less likely for those presenting with foot/ankle symptoms where other diagnoses (for example, tendinitis, plantar fasciitis, gout) may be as likely to be the cause of the problem.

iv) prescription management
  - The alternative hypothesis is that an OA diagnosis is more likely to be given if a patient receives stronger analgesia.

v) levels of recording of differential diagnoses
  - The alternative hypothesis is that a joint pain diagnosis relates to an underlying non-OA condition.

Methods

The North Staffordshire Osteoarthritis Project (NorStOP) was a longitudinal survey of all those aged 50 plus registered at 8 general practices. In the UK, most people are registered with a general practice and therefore the registers provide a convenient sampling frame for the local population. At baseline the general practitioners (GPs) at the practices excluded those with severe illness (for example, severe psychiatric or terminal illness) and questionnaires were then mailed to the remaining registered population aged 50 and over with reminders sent after 2 and 4 weeks. Further questionnaires were mailed at 3 years and 6–7 years[12,13]. Self-reported survey data was linked to primary care records (with consent) with records collated from 24 months prior to the baseline survey to either the date of the 6–7 year survey or the date the participant dropped out of the study (for example, if the participant did not respond to the 3 year survey, collation of the records ended then). The primary care record follow up lasted a median of 6.4 years from the baseline survey (IQR 3.7, 6.9).

We previously identified through consensus of GPs a set of Read codes relating to non-specific joint pain (hand, hip, knee, foot) which could be used by GPs as an alternative to an OA diagnosis code for older patients presenting with likely OA[6,11] and are available from www.keele.ac.uk/mrr. Two groups were identified for this analysis from all NorStOP baseline respondents who consented to medical record review, based on their primary care consultation records for the 12 months before the baseline survey. Group 1 received an OA diagnostic code during the 12 months (OA group); group 2 received a joint pain symptom code but not an OA diagnostic code during those 12 months (joint pain group). Respondents who received both an OA diagnostic code and a joint pain code were included in the OA group. Both groups included patients with ongoing problems and those consulting with new problems. The index date was the date of the recorded OA/joint pain code nearest to the baseline survey within this 12 month time period. Respondents for whom a body region (knee, hip, hand/wrist, foot/ankle) at the index date consultation could not be allocated, either through the code given or recorded in the free text of the consultation, were excluded in order to allow comparison by individual site.