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Management of Common Musculoskeletal Problems: A Survey of Ontario Primary Care Physicians

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Management of common musculoskeletal problems: a survey of Ontario primary care physicians

Education

Éducation

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Abstract

Background: In Canada, primary care physicians manage most musculoskeletal problems. However, their training in this area is limited, and some aspects of management may be suboptimal. This study was conducted to examine primary care physicians' management of 3 common musculoskeletal problems, ascertain the determinants of management and compare management with that recommended by a current practice panel.

Methods: A stratified computer-generated random sample of 798 Ontario members of the College of Family Physicians of Canada received a self-administered questionnaire by mail. Respondents selected various items in the management of 3 hypothetical patients: a 77-year-old woman with a shoulder problem, a 64-year-old man with osteoarthritis of the knee and a 30-year-old man with an acutely hot, swollen knee. Scores reflecting the proportion of recommended investigations, interventions and referrals selected for each scenario were calculated and examined for their association with physician and practice characteristics and physician attitudes.

Results: The response rate was 68.3% (529/775 eligible physicians). For the shoulder problem, all of the recommended items were chosen by the majority of respondents. However, of the items not recommended, ordering blood tests was selected by almost half (242 [45.7%]) as was prescribing an NSAID (236 [44.7%]). For the knee osteoarthritis, the majority of respondents chose the recommended items except exercise (selected by only 175 [33.1%]). Of the items not recommended, tests were chosen by about half of the respondents and inappropriate referrals (chiefly for orthopedic surgery) were chosen by a quarter. For the acutely hot knee, the majority of physicians chose all of the recommended items except use of ice or heat (selected by only 188 [35.6%]). Although most (415 [78.5%]) of the respondents selected the recommended joint aspiration for this scenario, 84 (15.9%) omitted this investigation or referral to a specialist. The selection of recommended items was strongly associated with training in musculoskeletal specialties during medical school and residency.

Interpretation: Primary care physicians' management of 3 common musculoskeletal problems was for the most part in accord with panel recommendations. However, the unnecessary use of diagnostic tests, inappropriate prescribing of NSAIDs, low use of patient-centred options such as exercise, and lack of diagnostic suspicion of infectious arthritis are cause for concern. The results point to the need for increased exposure to musculoskeletal problems during undergraduate and residency training and in continuing medical education.

Résumé

Contexte : Au Canada, les médecins de première ligne traitent la plupart des problèmes musculo-squelettiques. Leur formation dans ce domaine est toutefois limitée et il se peut que certains aspects du traitement soient moins qu'optimaux. On a réalisé cette étude pour examiner le traitement, par les médecins de pre-

mier recours, de trois problèmes musculo-squelettiques fréquents, définir les facteurs déterminants du traitement et le comparer à celui que recommande un groupe spécial sur la pratique courante.

Méthodes : Un échantillon aléatoire stratifié produit par ordinateur de 798 membres ontariens du Collège des médecins de famille du Canada ont reçu par courrier un questionnaire à remplir soi-même. Les répondants choisissaient divers éléments du traitement de trois patients hypothétiques : une femme âgée de 77 ans qui a un problème d'épaule, un homme de 64 ans atteint d'ostéoarthrite au genou et un homme de 30 ans qui presente une inflammation aiguë au genou. On a calculé des résultats reflétant la proportion des investigations, des interventions et des présentations recommandées choisies pour chaque scénario et l'on en a analysé le lien avec les caractéristiques des médecins et de la pratique, ainsi qu'avec les attitudes des médecins.

Résultats : Le taux de réponse a atteint 68,3 % (529/775 médecins admissibles). Dans le cas du problème d'épaule, la majorité des répondants ont choisi tous les éléments recommandés. Parmi les éléments non recommandés, toutefois, presque la moitié des répondants (242 [45,7 %]) ont commandé des analyses sanguines et prescrit un AINS (236 [44,7 %]). Dans le cas de l'ostéoarthrite du genou, la majorité des répondants ont choisi les éléments recommandés sauf l'exercice (choisi par seulement 175 [33,1 %]). Parmi les éléments non recommandés, presque la moitié des répondants ont choisi des tests et le quart, des présentations inutiles (principalement chirurgie orthopédique). Dans le cas de l'inflammation du genou, la majorité des médecins ont choisi tous les éléments recommandés sauf l'utilisation de la glace ou de la chaleur (choisie par seulement 188 [35,6 %]). Même si la plupart (415 [78,5 %]) des répondants ont choisi l'aspiration de l'articulation recommandée dans ce scénario, 84 (15,9 %) ont omis cette investigation ou la présentation à un spécialiste. On a établi un lien solide entre la sélection des éléments recommandés et la formation dans des spécialités musculo-squelettiques pendant les études en faculté de médecine et la résidence.

Interprétation : Le traitement par des médecins de premier recours de trois problèmes musculo-squelettiques courants était en grande partie conforme aux recommandations du groupe spécial. Le recours inutile à des tests de diagnostic, la prescription inutile d'AINS, le faible recours à des options axées sur le patient comme l'exercice et le fait qu'on n'a pas soupçonné au diagnostic une arthrite infectieuse préoccupent toutefois. Les résultats indiquent qu'il faut exposer davantage les étudiants aux problèmes musculo-squelettiques au cours de leur formation de premier cycle et en résidence, ainsi que dans le contexte de l'éducation médicale continue.

Musculoskeletal problems are extremely prevalent in the general population.[1] In Ontario, for example, they are the leading reason for visits to primary care physicians and the leading cause of disability.[2] Although primary care physicians are largely responsible for diagnosing and treating these conditions, they often receive little exposure to them during undergraduate and residency training.[3,4] Continuing medical education for musculoskeletal problems has often been inappropriate in content and format.[5] Documented problems in primary care practice include accuracy of diagnosis,[6,7] test ordering,[8] medication use[9] and delays in referral, in some cases up to several years.[10,11]

The purpose of this study was to examine primary care physicians' management of common musculoskeletal disorders, ascertain the determinants of management and compare management with that recommended by a current practice panel.

Methods

Our methods have been described in detail elsewhere, in reporting the results of a portion of our study related to the management of rheumatoid arthritis.[12] In brief, we surveyed 798 family physicians, a computer-generated stratified (urban/rural) random sample of active Ontario members of the College of Family Physicians of Canada. A self-administered questionnaire was used for the survey; 2 follow-up mailings were sent to nonrespondents.

The questionnaire described 3 hypothetical patients: a

77-year-old woman with a shoulder problem, a 64-year-old man with moderately severe knee osteoarthritis and a 30-year-old man with an acutely hot, swollen knee (Appendix 1). The questionnaire also contained 2 scenarios of patients with rheumatoid arthritis and questions about physician confidence; the findings relevant to those sections have been published previously.[12,13]

For each scenario the physicians were asked to indicate, from a standard list of items, which investigations, interventions (treatments) and referrals they would choose in the management of the patient. Space was also left for open-ended responses.

A multidisciplinary panel comprising medical specialists, family physicians and arthritis rehabilitation professionals was formed to consider the current standard of practice for patients with the musculoskeletal problems. The panelists were asked to give their opinion about the optimal management by a competent family physician of the patients described in the scenarios.

We calculated individual current practice scores by assigning one point for each item chosen that agreed with the panel's recommendations. To adjust for the oversampling of rural physicians, all analyses were weighted according to the actual distribution of urban and rural members of the College in Ontario.

To account for multiple comparisons, findings were considered statistically significant at $p < 0.01$.

Results

Of the 798 physicians 17 did not see patients with musculoskeletal disorders and 6 were not traceable. Of the remaining 775 physicians 529 returned completed questionnaires, for a response rate of 68.3%. The nonrespondents were significantly less likely than the respondents to be certificants of the College of Family Physicians of Canada (189/246 [76.8%] v. 467/529 [88.3%]) ($p < 0.001$) but did not differ significantly in location of practice, location of medical school, year of graduation or sex.

Table 1 shows the proportions of physicians who selected various items in the management of the 3 hypothetical patients. For the 77-year-old woman with a shoulder problem, all of the recommended items were selected by the majority of respondents. Of the investigations and interventions that were not recommended, ordering blood tests was chosen by almost half (45.7%) of the respondents, as was prescribing an NSAID (44.7%) despite the patient's advanced age and lack of previous response to the drug.

For the 64-year-old man with knee osteoarthritis, the majority of physicians chose all the recommended items except exercise (selected by 33.1%) (Table 1). Of the items not recommended by the panel, tests were chosen by about half of the respondents and inappropriate referrals (chiefly for orthopedic surgery) were chosen by a quarter (data not shown).

For the scenario of the 30-year-old man with the hot, swollen knee, all of the recommended items except the use of ice or heat were chosen by the majority of respondents (Table 1). Although most (78.5%) of the respondents selected the recommended investigation of joint aspiration, 84 (15.9%) omitted this item or referral to a specialist (data not shown).

For management of the shoulder problem, selection of recommended items was strongly associated with medical school training in musculoskeletal problems for the recommended investigations ($p < 0.001$), with residency training in orthopedic surgery ($p < 0.001$) or sports medicine ($p = 0.008$) for the recommended interventions, and with female sex ($p < 0.001$) and lower age ($p = 0.005$) for

Table 1: Weighted numbers of respondents who chose various investigations, interventions and referral items in the management of 3 common musculoskeletal problems*

Item†	No. (and %) of respondents		
	Shoulder problem	Knee osteoarthritis	Hot, swollen knee
Investigations			
Complete blood count	242 (45.7)	271 (51.2)	494 (93.3)‡
Erythrocyte sedimentation rate	242 (45.7)	259 (48.9)	434 (82.0)‡
Uric acid	93 (17.5)	244 (46.2)	454 (85.8)‡
Radiography	359 (67.9)‡	468 (88.5)‡	305 (57.7)‡
Joint aspiration with or without synovial fluid analysis	3 (0.6)	122 (23.1)	415 (78.5)‡
Blood culture with or without culture of urethral swabs	0 (0.0)	6 (1.2)	309 (58.4)‡
Mean score, %	67.9	88.5	76.0
Interventions			
Therapy with NSAID or high-dose ASA	236 (44.7)	323 (61.0)‡	330 (62.4)
Recommend exercises	292 (55.2)	175 (33.1)‡	10 (1.8)
Recommend rest	117 (22.2)	153 (29.0)	282 (53.3)‡
Recommend ice or heat	345 (65.3)‡	267 (50.4)	188 (35.6)‡
Mean score, %	65.3	46.0	44.5
Referrals			
Physiotherapy	417 (78.8)‡	287 (54.2)‡	19 (3.6)
Mean score, %	78.8	54.2	–

*See Appendix 1 for descriptions of the hypothetical problems.
†Items not recommended by current practice panel for any of the 3 scenarios included: measurement of rheumatoid factor, antinuclear antibody, blood urea nitrogen or creatinine; therapy with acetaminophen, acetaminophen with codeine, low-dose ASA or allopurinol, initiation of therapy with disease-modifying antirheumatic agent (e.g., gold), or use of corticosteroids orally or by injection in joint; and referral for occupational therapy, social work, rheumatology, orthopedic surgery, general internal medicine, or rehabilitation medicine and physiatry.
‡Item recommended by panel.

the recommended referrals. Higher practice scores for management of the knee osteoarthritis were related to residency training in rehabilitation medicine for the recommended investigations (p = 0.003) and female sex for the recommended referrals (p = 0.002). No significant correlations were found for the management of the acutely hot knee.

Discussion

For the most part primary care physicians' management of the 3 common musculoskeletal problems was in accord with the panel's recommendations. However, the unnecessary ordering of diagnostic tests and referral to specialists, the inappropriate prescribing of NSAIDs, the low use of patient-centred options such as exercise, and the lack of diagnostic suspicion about infectious arthritis are cause for concern. Given our results, there is a clear need for intensified and mandatory exposure to musculoskeletal problems during undergraduate and residency training, innovative approaches to continuing medical education and further work to define the basis for evidence-based practice.

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Appendix 1: Scenarios for the 3 common musculoskeletal problems

Shoulder problem	Osteoarthritis of the knee	Hot, swollen knee
A 77-year-old woman, a retired bookkeeper living with her husband, presents with a 6-week history of discomfort in her right shoulder while sleeping and difficulty doing her hair, putting on her coat, doing up her bra and reaching up to high shelves. On examination, there is tenderness over the anterior aspect of the shoulder and pain on shoulder abduction in the mid-range. The remainder of the findings on physical examination are normal. There is no history of trauma. She has been previously well, with no history of peptic ulcer disease or any other serious illness. A previous physician prescribed a 3-week course of an NSAID, without relief.	A 64-year-old man, a married middle-level manager for a life insurance company, presents with a 6-month history of stiffness in his right knee after prolonged sitting as well as pain and difficulty with the right knee going up and down stairs. He reports mild intermittent swelling of the knee. He has continued to work without any serious limitation, but he has recently given up golf as a result of this problem. On examination, there is moderate crepitus in the right knee and a small effusion. The remainder of the findings on physical examination are normal. There is no history of trauma. He has been previously well, with no history of peptic ulcer disease or any other serious illness. A previous physician prescribed a 3-week course of an NSAID, without relief.	A 30-year-old single man, an executive who travels extensively and who is a heavy social drinker, presents with sudden onset overnight of an extremely painful hot, swollen knee. On examination, there is a moderate effusion, extreme tenderness and restricted range of motion. He walks with a marked limp. There is no history of trauma. He has been previously well, with no history of peptic ulcer disease or hemophilia or any other serious illness.