Prescription and comorbidity screening following consultation for acute gout in primary care

Edward Roddy1,2, Christian D. Mallen1, Samantha L. Hider1,2 and Kelvin P. Jordan1

Abstract

Objective. To describe prescribing patterns and cardiovascular risk factor screening in patients, following consultation for acute gout in primary care.

Methods. This study was undertaken in two inter-linked regional primary care databases: Consultations in Primary Care Archive (CiPCA) and Prescriptions in Primary Care Archive (PiPCA). During 2001–04, consultations in CiPCA were identified at 10 participating practices from gout-related Read morbidity codes. Lipid, blood pressure, glucose and renal function monitoring were identified from Read codes and consultation free text over the next month. Prescriptions for traditional NSAIDs, gastroprotective agents, colchicine, coxibs, corticosteroids, analgesic agents and urate-lowering therapies (ULTs) issued to these patients over the subsequent 12 months were identified from PiPCA.

Results. Six hundred and seventy-three new gout consultations were identified. Monitoring of lipids (5%), blood pressure (26%), glucose (6%) and renal function (21%) within 1 month of index consultation were infrequently recorded. There were 583 consultations for acute gout. Traditional NSAIDs (68%) were most commonly prescribed, followed by colchicine (15%), coxibs (5%) and analgesia only (5%). Seven per cent did not receive a prescription. The most frequently prescribed traditional NSAIDs were diclofenac (41%) and indomethacin (32%). Gastroprotection was co-prescribed with NSAIDs for 17% of patients. Sixty per cent of patients treated with colchicine were prescribed high-dose regimens (500 \( \text{mg} \) at least four times daily). ULTs were prescribed within 12 months in 23% of patients. Nineteen per cent of ULTs were prescribed during acute attack.

Conclusions. Primary care acute gout management is suboptimal. Education of general practitioners about acute gout management and cardiovascular risk is a priority.

Key words: Acute gout, Primary care, Non-steroidal anti-inflammatory drugs, Colchicine, Comorbidity.

Introduction

Gout is one of the most prevalent inflammatory arthritides, and is largely managed in primary care in the UK. Acute gout is one of the most painful forms of arthritis, characterized by the sudden onset of severe peripheral joint pain, typically affecting the first MTP joint, with associated erythema, swelling and tenderness. Recent guidelines published by the European League against Rheumatism (EULAR) and British Society for Rheumatology (BSR) recommend NSAIDs or colchicine as first-line therapies for acute gout [1, 2]. However, both of these options have reported significant rates of adverse events. NSAIDs should be used with caution in the elderly due to frequent upper gastrointestinal and renal toxicity. Colchicine frequently causes diarrhoea and vomiting, especially when used in high doses [3], as recommended in the British National Formulary (BNF) until very recently [4]. In a clinical trial, all 22 subjects randomized to receive colchicine at a dose of 1 mg immediately, followed by 0.5 mg every 2 h, developed diarrhoea and/or vomiting within 36 h [3]. EULAR, BSR and recent editions of the BNF recommend the use of colchicine in lower doses,
for example, 0.5 mg two to four times daily [1, 2, 4]. In a recent observational study, only 8% of patients treated for acute gout with low-dose colchicine developed diarrhoea [5]. Clinical experience appears to support this approach [6]. Gout is frequently associated with cardiovascular and renal comorbidity [7–18], and EULAR and BSR recommendations advocate screening and treating comorbid cardiovascular risk factors in patients who present with gout [1, 2, 18].

Whereas several studies have shown the long-term management of gout to be suboptimal [8, 17, 19–22], little is known about the management of acute gout in primary care. Questionnaire surveys of general practitioners (GPs) have assessed reported practice [23–25]. However, to our knowledge, there have been no studies documenting the actual management of acute gout in primary care. Previous studies have described the acute management of gout to be suboptimal [8, 17, 19–22].

We undertook this observational study in two linked regional primary care databases in order to describe the prescribing patterns and cardiovascular risk factor screening in patients consulting for acute gout in primary care.

Methods

This study was undertaken in two inter-linked regional primary care databases. The Consultations in Primary Care Archive (CiPCA) and Prescriptions in Primary Care Archive (PiPCA) record all consultations and prescriptions issued in 10 general practices in North Staffordshire, UK as described previously [27]. These practices had a total registered population of 81,293 in 2004. They are part of the Keele General Practice Research Partnership in which regular cycles of training, assessment and feedback ensure the quality of computerized morbidity coding [28]. CiPCA has been shown to provide comparable consultation prevalence rates to national databases [27]. Morbidities are entered using the Read code classification. Read codes are organized into a hierarchy of morbidity, symptom and process codes in system-specific chapters, for example, chapters relating to musculoskeletal and CTDs, and circulatory system diseases. This classification becomes more specific as the index consultation. Consultations for gout by adults aged ≥ 18 years were identified from specific gout-related Read codes contained within Chapter C ‘Endocrine/Nutrition/Metabolism/Immune Disease’ of the Read code system. Two different versions of Read codes were used across the participating practices during the study period. Read codes starting C34 ‘Gout’ were identified in nine practices that used Read version 5 codes. In the single practice which used the earlier version, Read version 4 codes, Read codes starting C53 ‘Gout’ were identified. Patients who consulted more than once for gout were only included once.

Comorbidity screening

Read codes and free text for consultations in the month subsequent to the index consultation were searched for evidence of screening for hypertension (measurement of blood pressure), hyperlipidaemia (plasma lipids), diabetes mellitus (blood glucose) and impaired renal function (serum creatinine). Screening was considered to have been done if a relevant diagnosis was identified by a specific Read code or consultation free text recorded either the performance of a screening test or the result of that test. For example, screening for diabetes mellitus was considered to have been done if a diabetes-related Read code was identified or consultation free text either recorded that blood glucose was checked or stated the blood glucose level.

Consultations regarding hypertension, hyperlipidaemia, diabetes mellitus and ischaemic heart disease during the 12 months prior to index consultation were also identified from specific Read codes in order to identify patients with known cardiovascular disease among gout consulters.

Identification of consultations for acute gout

It was anticipated that not all index gout consultations would be for acute gout. For example, patients might consult to discuss long-term management, to follow-up consultations in other health care settings, or with attacks that were either improving or had resolved. The index consultation free text was examined to identify such non-acute consultations.

Previous studies undertaken in primary care databases have relied upon a primary care diagnosis to identify gout cases [8, 17, 19, 20]. However, other authors have suggested that gout is frequently misdiagnosed in primary care [30]. Free text for the remaining ‘acute’ consultations was scrutinized further to describe the distribution of the affected joint(s) and clinical features suggestive of acute gout, and hence illustrate the recorded clinical profile of patients diagnosed with gout in primary care. However, typical joint sites and clinical features were not essential
inclusion criteria for this study. The following descriptors were considered to suggest an acute attack of gout: ‘acute gout’, ‘inflammation’, ‘tenderness’, ‘redness’, ‘erythema’, ‘swelling’, ‘warmth’, ‘effusion’ and ‘podagra’.

**Prescription data**

Consultations in CIPCA were subsequently linked to PiPCA by matching the consultation and prescription dates. Individual prescriptions were also searched for 12 months subsequent to the index consultation. Prescriptions were first searched for the category of drug prescribed at the index consultation in patients who had consulted with acute gout. These were classified as traditional non-selective NSAIDs, coxibs, colchicine, corticosteroids, simple analgesics or antibiotics. The specific traditional non-selective NSAID, coxib or corticosteroid prescribed was recorded. Both new and existing prescriptions for concomitant gastroprotective agents (H2-receptor antagonists, misoprostol, proton-pump inhibitors) were also recorded. Doses of colchicine (categorized as 500 μg once or twice daily, three- or four times daily, greater than four times daily) and corticosteroid were recorded. Prescription of urate-lowering therapies (ULTs) was also assessed and its timing in relation to the index consultation determined (prior, during, within 6 months, between 6 and 12 months) in the whole cohort, regardless of whether or not the patient had consulted with acute gout.

**Statistical analysis**

Data were described using simple descriptive statistics. Continuous data were described using means and standard deviations. Categorical data were expressed as percentages with 95% CI, where appropriate. The frequency of comorbidity screening in those who had consulted with hypertension, hyperlipidaemia, diabetes mellitus or impaired renal function was compared with those who had not consulted with these conditions during the 12 months prior to the index consultation. Recorded screening for hypertension (P = 0.002) and any traditional cardiovascular risk factor (P = 0.015) was performed slightly more frequently in those who had consulted for cardiovascular disease in the preceding 12 months compared with those who had not. No difference in screening was observed between the two groups specifically for hyperlipidaemia, diabetes mellitus or impaired renal function individually.

**Results**

During the period 2001–04, primary care gout consultations were identified for 673 patients who had not consulted for gout in the preceding 2 years, which approximates to an annual incident consultation rate of 20.7/10 000 registered population. Their mean age was 63.2 years (s.d. 14.5). Five hundred and nineteen (77%) were males.

**Comorbidity screening**

Within 1 month of index consultation, recorded screening rates for hypertension, hyperlipidaemia, diabetes mellitus and impaired renal function were low (Table 1). Three hundred and eighty (56%) patients had not consulted for hypertension, hyperlipidaemia, diabetes mellitus or ischaemic heart disease during the 12 months prior to index consultation. Recorded screening for hypertension (P = 0.002) and any traditional cardiovascular risk factor (P = 0.015) were performed slightly more frequently in those who had consulted for cardiovascular disease in the preceding 12 months compared with those who had not. No difference in screening was observed between the two groups specifically for hyperlipidaemia, diabetes mellitus or impaired renal function individually.

**Consultations for acute gout**

Of the 673 consultations for gout, free text suggested that 90 consultations (13%) were not for acute gout. Of these, 61 (68%) were related to long-term management, 22 (24%) to attacks that were improving or had resolved and 7 (8%) were follow-up consultations in other health care settings. The remaining 583 (87%) patients were deemed to have consulted for acute gout. Mean age was 63.0 years (s.d. 14.7). Four hundred and fifty-one (77%) were males. Mono-articular attacks were described in 453 patients (77%; 95% CI 74%, 81%) and were reported as affecting the great toe in 307 (53%), 164 (28%) specifying the first MTP joint. Other sites for attack were described as affecting the small toe in 165 (29%), the hind foot (foot below ankle) in 204 (31%), the midfoot in 28 (5%) and the forefoot in 51 (9%).

**Table 1** Frequency of comorbidity screening overall, and in those who had and had not consulted with cardiovascular comorbidity in the preceding 12 months

<table>
<thead>
<tr>
<th>Comorbidity</th>
<th>All patients (n = 673)</th>
<th>Comorbidity consultation (n = 293)</th>
<th>No comorbidity consultation (n = 380)</th>
<th>P-value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>178 (26)</td>
<td>95 (32)</td>
<td>83 (22)</td>
<td>0.002</td>
</tr>
<tr>
<td>Hyperlipidaemia</td>
<td>34 (5)</td>
<td>14 (5)</td>
<td>20 (5)</td>
<td>0.776</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>43 (6)</td>
<td>22 (8)</td>
<td>21 (6)</td>
<td>0.297</td>
</tr>
<tr>
<td>Renal impairment</td>
<td>138 (21)</td>
<td>66 (23)</td>
<td>72 (19)</td>
<td>0.254</td>
</tr>
<tr>
<td>Any cardiovascular risk factor</td>
<td>208 (31)</td>
<td>105 (36)</td>
<td>103 (27)</td>
<td>0.015</td>
</tr>
</tbody>
</table>

*Chi-squared test comparing the frequency of screening for comorbid disease between those who had and had not consulted with cardiovascular comorbidity in the 12 months prior to the index consultation.
mono-articular attacks were elsewhere in the foot or ankle in 104 (18%), the knee in 7 (1%) and the upper limb in 35 (6%) patients. Attacks were oligo- or poly-articular in 27 (5%) patients. The distribution of affected joints was not described in 103 (18%) patients. Features suggestive of acute gout were stated to be present in 321 (55%), absent in 6 (1%) and not described in 256 (44%) patients.

Prescriptions for acute gout

Prescriptions from the index consultation for the 583 patients who consulted for acute gout are shown in Table 2. Traditional NSAIDs were most frequently prescribed (68%) followed by colchicine (15%), coxibs (5%) and analgesia (5%) only. No prescriptions were issued for IA corticosteroids. Antibiotics were prescribed for 29 (5%; 95% CI 4%, 7%) patients.

Table 3 shows the prescribed drug categories stratified by age group. Traditional NSAIDs were prescribed less frequently with increasing age ($P=0.004$), but were the most frequently used drug in all age groups. Traditional NSAIDs were prescribed less frequently from 2001 through to 2004 ($P=0.019$), whereas prescription of coxibs became more frequent ($P=0.005$). There was an increasing trend of colchicine prescription from 2001 to 2004 although this was not statistically significant ($P=0.070$).

The most frequently prescribed individual NSAIDs were diclofenac, indomethacin, naproxen and ibuprofen (Table 4).

### TABLE 2 Drug category prescribed at time of index consultation for acute gout

<table>
<thead>
<tr>
<th>Drug</th>
<th>$n$ (%; 95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSAIDs</td>
<td>395 (68; 64, 71)</td>
</tr>
<tr>
<td>Colchicine</td>
<td>86 (15; 12, 18)</td>
</tr>
<tr>
<td>Coxibs</td>
<td>28 (5; 3, 7)</td>
</tr>
<tr>
<td>Analgesia</td>
<td>28 (5; 3, 7)</td>
</tr>
<tr>
<td>Corticosteroids (oral)</td>
<td>1 (0; 0, 1)</td>
</tr>
<tr>
<td>NSAID and colchicine</td>
<td>2 (0; 0, 1)</td>
</tr>
<tr>
<td>No prescription</td>
<td>43 (7; 6, 10)</td>
</tr>
</tbody>
</table>

### TABLE 3 Category of prescribed drug stratified by patient age

<table>
<thead>
<tr>
<th>Drug</th>
<th>21–30 years</th>
<th>31–40 years</th>
<th>41–50 years</th>
<th>51–60 years</th>
<th>61–70 years</th>
<th>71–80 years</th>
<th>&gt;80 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional NSAIDs</td>
<td>5 (83)</td>
<td>30 (77)</td>
<td>65 (77)</td>
<td>80 (71)</td>
<td>94 (64)</td>
<td>79 (62)</td>
<td>42 (63)</td>
</tr>
<tr>
<td>Colchicine</td>
<td>0</td>
<td>3 (8)</td>
<td>12 (14)</td>
<td>10 (9)</td>
<td>29 (20)</td>
<td>20 (16)</td>
<td>12 (18)</td>
</tr>
<tr>
<td>Coxibs</td>
<td>0</td>
<td>0</td>
<td>1 (1)</td>
<td>4 (4)</td>
<td>12 (8)</td>
<td>8 (6)</td>
<td>3 (5)</td>
</tr>
<tr>
<td>Analgesia</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>6 (5)</td>
<td>6 (4)</td>
<td>11 (9)</td>
<td>5 (8)</td>
</tr>
<tr>
<td>Corticosteroids (oral)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1 (1)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>NSAID and colchicine</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1 (1)</td>
<td>1 (2)</td>
</tr>
<tr>
<td>No prescription</td>
<td>1 (17)</td>
<td>6 (15)</td>
<td>7 (8)</td>
<td>11 (10)</td>
<td>5 (3)</td>
<td>9 (7)</td>
<td>4 (6)</td>
</tr>
<tr>
<td>Total</td>
<td>6</td>
<td>39</td>
<td>85</td>
<td>112</td>
<td>146</td>
<td>128</td>
<td>67</td>
</tr>
</tbody>
</table>

Gastroprotective agents were co-prescribed for 67 patients who were prescribed an NSAID (17%; 95% CI 14%, 21%). Gastroprotective agents were prescribed more frequently with increasing age ($P=0.027$) (Table 5) even though the majority of patients in all age groups did not receive gastroprotection.

Of the 86 patients who were prescribed colchicine, the prescribed dose was 500 μg more than four times daily in 57 patients (66%; 95% CI 56%, 75%), 500 μg three or four times daily in 17 patients (20%; 95% CI 13%, 29%), and 500 μg once or twice daily in 7 patients (8%; 95% CI 4%, 16%).

### TABLE 4 Frequency of prescription of individual NSAIDs

<table>
<thead>
<tr>
<th>NSAID</th>
<th>$n$ (% of all NSAID prescriptions; 95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diclofenac</td>
<td>160 (41; 36, 45)</td>
</tr>
<tr>
<td>Indomethacin</td>
<td>124 (32; 27, 36)</td>
</tr>
<tr>
<td>Naproxen</td>
<td>54 (14; 10, 17)</td>
</tr>
<tr>
<td>Ibuprofen</td>
<td>45 (11; 9, 15)</td>
</tr>
<tr>
<td>Other</td>
<td>12 (3; 2, 5)</td>
</tr>
</tbody>
</table>

### Prescriptions for ULT

Of the 673 patients who consulted for gout, 157 (23%; 95% CI 20%, 27%) were prescribed ULT during the 12 months subsequent to index consultation. Allopurinol was the prescribed ULT in 154 of these patients (98%; 95% CI 95%, 99%). Of the 157 patients prescribed ULT, 30 (19%; 95% CI 14%, 26%) were already taking ULT at the time of the index consultation, 23 (15%; 95% CI 10%, 21%) were first prescribed ULT at the index consultation, 79 (50%; 95% CI 43%, 58%) commenced ULT within 6 months and 25 (16%; 95% CI 11%, 23%) commenced ULT between 6 and 12 months of the index consultation.

ULTs were prescribed for 119 patients who consulted with acute gout within 12 months of the index consultation. Of these, 23 (19%; 95% CI 13%, 27%) were prescribed ULT during the index consultation, that is, during an acute attack of gout.
by patient age they believe to be gout, rather than seeking to confirm however, we sought to examine how GPs manage what diagnosis of gout may not have been accurate in all patients; with a diagnosis of gout. We acknowledge that the diag-

nosis of gout is inter-linked regional primary care databases. Primary care management of acute gout appears to be suboptimal. Gout is associated with significant cardiovascular comorbidities [7, 10–18], yet the recorded screening rates for hypertension, hyperlipidaemia, diabetes mellitus and renal impairment were low, with fewer than one-third of the patients being screened for any cardiovascular risk factor, even among those without known cardiovascular risk factors or disease. Acute gout was most frequently treated with traditional NSAIDs, even among the elderly who are at greater risk of upper gastrointestinal toxicity, followed by colchicine. Gastroprotective agents were co-prescribed with <20% of NSAID prescriptions. Colchicine was most frequently prescribed in high doses contrary to recent management guidelines [1, 2]. ULTs were prescribed during the 12 months following the index consultation in only 23% of patients: approximately one-fifth of these were prescribed ULT at the time of an acute attack.

The study’s strengths are its primary care setting, the completeness of prescription data and the rigorous quality assurance processes undertaken to ensure the robustness of computerized morbidity coding in the participating practices [28]. An important caveat to our study is the use of consultation free text, which is not quality assessed. Whereas it would be expected that GPs would enter all relevant information regarding the gout consultation, rates of screening may be underestimated. Previous studies undertaken in primary care databases have selected their cases using a primary care diagnosis [8, 17, 19, 20], which is most commonly made on clinical grounds [21, 25], thereby risking misclassification bias [30]. Crystal identification remains the diagnostic gold standard [18]. The primary inclusion criterion in this study was a primary care consultation tagged with a gout-related Read code; however, evidence from consultation free text concerning features of inflammation and the distribution of affected joints was generally consistent with a diagnosis of gout. We acknowledge that the diagnosis of gout may not have been accurate in all patients; however, we sought to examine how GPs manage what they believe to be gout, rather than seeking to confirm the accuracy of the gout diagnosis. It is possible that screening rates for comorbidity were low because patients were already known to have cardiovascular disease prior to consultation for gout. However, restricting the analysis to patients who had not consulted for cardiovascular disease or risk factors in the preceding year did not change these findings. In fact, screening for hypertension was more likely if a patient had consulted for cardiovascular disease or risk factors previously. Acute gout is one of the most painful arthritides and it is perhaps surprising that 7% of the consultations apparently left the attack untreated. However, our data do not take account of the purchase of NSAIDs or analgesics ‘over the counter’ or use of IA corticosteroids which may not require a prescription to be issued during the consultation. Apparently, untreated attacks were more frequent in people of working age who might be more likely to purchase medications ‘over the counter’. Treatment with allopurinol is usually not recommended until the acute attack has resolved [1], yet we found that 19% of the prescriptions for allopurinol were issued during the consultation for acute attack. It is possible that such prescriptions were accompanied by undocumented appropriate advice to delay starting allopurinol until the attack had settled. Finally, although CIPCA and PiPCA contain data from 10 general practices, these are located in one geographical region which may limit the generalizability of the study findings. However, studies from several different countries have demonstrated suboptimal long-term management of gout in primary care [17, 19–25].

Our study is, to our knowledge, the first study describing the management of acute gout in primary care. Previous studies have assessed reported practice via questionnaire surveys of GPs [23–25] or described the management of acute gout in secondary care [5, 26]. Our findings agree with surveys of GPs from Canada [23] and Australia [24] in which GPs reported NSAIDs to be the most frequently used drug for acute gout treatment followed by colchicine. However, in a questionnaire survey that asked GPs from Ireland how they usually managed gout, 89% reported usually addressing risk factors and comorbidities [25], which contrasts greatly with our finding that only 31% of patients were screened for any cardiovascular risk factor in practice. In a study of 184 patients hospitalized with acute gout, 51% were treated with NSAIDs and 53% with colchicine although the

**Table 5** Frequency of prescription of gastroprotective agents among patients who were prescribed NSAIDs stratified by patient age

<table>
<thead>
<tr>
<th></th>
<th>21–30 years</th>
<th>31–40 years</th>
<th>41–50 years</th>
<th>51–60 years</th>
<th>61–70 years</th>
<th>71–80 years</th>
<th>&gt;80 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>PPI</td>
<td>0</td>
<td>1 (3)</td>
<td>7 (11)</td>
<td>4 (5)</td>
<td>8 (9)</td>
<td>11 (14)</td>
<td>5 (12)</td>
</tr>
<tr>
<td>H2-blocker</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>2 (3)</td>
<td>10 (11)</td>
<td>4 (5)</td>
<td>2 (5)</td>
</tr>
<tr>
<td>Misoprostol</td>
<td>0</td>
<td>0</td>
<td>5 (8)</td>
<td>3 (4)</td>
<td>1 (1)</td>
<td>3 (4)</td>
<td>1 (2)</td>
</tr>
<tr>
<td>None</td>
<td>5 (100)</td>
<td>29 (97)</td>
<td>53 (82)</td>
<td>71 (89)</td>
<td>75 (80)</td>
<td>61 (77)</td>
<td>34 (81)</td>
</tr>
<tr>
<td>Total</td>
<td>5</td>
<td>30</td>
<td>65</td>
<td>80</td>
<td>94</td>
<td>79</td>
<td>42</td>
</tr>
</tbody>
</table>

Discussion

This study examined prescribing and comorbidity screening following consultations for acute gout identified in two inter-linked regional primary care databases. Primary care management of acute gout appears to be suboptimal.
patient group was older and more likely to have had comorbidty than our study population which may have reduced NSAID use [26]. A study of 50 patients treated for acute gout in hospital with colchicine reported that 96% of patients received colchicine at a dose of <2.5 mg/24 h suggesting that awareness of the efficacy and tolerability of low-dose colchicine is higher in secondary care [5]. The elderly are considered to be particularly at risk of NSAID-induced upper gastrointestinal events. We found that ~20% of those aged >70 years were co-prescribed gastroprotective agents, consistent with estimates from previous studies in similar age groups, which range from 16 to 38% [31–33]. However, it is not clear whether gastroprotection is as important for short-term use as in the treatment of acute gout. It is also possible that co-prescribing gastroprotection was less common at the time of the study, 2001–04, than it is currently. It is interesting that indomethacin was the second most frequently prescribed NSAID (32% of all NSAID prescriptions) despite having a worse gastrointestinal adverse event profile than many other NSAIDs [34, 35]. This probably reflects the historical place that indomethacin has in the treatment of gout even though there is no evidence to suggest that it is more efficacious than other quick-acting NSAIDs [1].

This study clearly identifies suboptimal care for acute gout in primary care with regard to screening for comorbid disease, use of NSAIDs particularly in the elderly, colchicine dosing and commencement of ULT. The reasons for suboptimal care are, however, not known. It is perhaps unfair to compare primary care management between 2001 and 2004 against more recent management recommendations, although the link between cardiovascular disease and gout is well established and predates these recent recommendations [7, 13, 14, 36]. In particular, prescription of colchicine in a high-dose regimen during this period, although contrary to the advice and practice of many rheumatologists, was in accordance with the BNF, the standard reference text for prescribing in the UK. Establishing low-dose colchicine in the primary care armamentarium for acute gout would be aided by a high-quality randomized clinical trial demonstrating its efficacy and safety. It will be interesting to see whether the management of gout improves in the UK following the publication of EULAR and BSR recommendations [1, 2] and new instructions for colchicine dosing in the most recent edition of the BNF [4]. Wider dissemination of the EULAR and BSR recommendations [1, 2] in order to educate GPs about management strategies for acute gout and the importance of cardiovascular screening in these patients is a priority.

### Rheumatology key messages

- Acute gout management is frequently suboptimal with regard to NSAID use, colchicine dosing and commencement of ULT.
- Screening for comorbid cardiovascular risk factors is infrequently performed in primary care.

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### Disclosure statement

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