Questionnaire survey of management and prescription of general practitioners in knee osteoarthritis: A comparison with 2000 EULAR recommendations

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Abstract

Objective

A large-scale questionnaire survey on the way to handle and treat knee osteoarthritis (OA) was conducted with French general practitioners (GPs). Results of this questionnaire were compared with the 2000 EULAR recommendations on the treatment of knee OA.

Results

There was a high response rate among GPs (70%). Major findings included a high request rate for radiological examinations even if not required (about one-third of GPs in the case of a non-inflammatory condition); the under-utilization of non-pharmacological treatments as a first line approach; the prescription of paracetamol as the first-line drug; the co-prescription of non-steroidal anti-inflammmatory drugs in 40% as a first-line approach; and a low rate of corticoidsteroid prescription.

Conclusions

There is reasonable agreement between the results of this survey and EULAR 2000 recommendations. However, non-pharmacological approaches are under-utilized and should be reinforced.

Key words

Osteoarthritis, guidelines, management, therapeutics.

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Introduction

Osteoarthritis (OA) is a major health disease problem in European countries, affecting millions of people. Increased age is a major factor with up to 68% of women and 58% of men aged 65 years or older having radiological evidence of OA (1). Symptomatic OA of the knee is more frequent in women than in men, its prevalence increasing with age: 7% at age 65-70 up to 11.2% at age over 80 (2). OAof the knee is generally associated with pain, which eventually leads to functional disability and only half of those suffering from this condition actually undergo prolonged treatment. Thus OA is associated with major functional, social and economic repercussions (3). There is a large variation in the level of pain and disability among OA patients.

Main goals in the treatment of OA are the alleviation of pain and maintaining function. Another principle goal would be to retard the progression of the disease, a target which is not obtainable at the present time. Current treatments include non-pharmacological and pharmacological modalities. To better confirm the effectiveness of such therapeutic modalities in terms of evidence-based medicine, a panel of experts has recently established recommendations for the management of knee and hip OA. These recommendations include the 2000 EULAR guidelines (4), which were generated from an evidence-based approach based on a systematic review of the literature, as well as a consensus approach based on expert opinion. Those clinical guidelines were defined in order to "systematically develop statements to assist practitioner and patient decisions about appropriate health care for specific clinical conditions". Therefore a key question is how these recommendations are implemented by practitioners.

The aim of our study was to investigate how French general practitioners (GPs) manage and treat the patient with knee OAin different clinical settings.

Methods

The questionnaire was constructed in order to assess the clinical decision-making process of French practitioners in the hypothetical case of a 58-year-old woman suffering from knee OA, positing 3 different stages of the disease.

For each stage 8 questions were asked. In stage 1, the patient presents with a pure mechanical pain without acute exacerbation. In stage 2, the patient presents a slight increase in pain intensity, but again without any acute episode, nor significant synovial fluid effusion. In stage 3, the patient suffers form an acute exacerbation of the disease with increased morning stiffness, night pain and pain exacerbation associated with synovial fluid effusion. These 3 clinical settings correspond to the 3 common stages usually encountered. The main questions were related to the request of radiological and laboratory examinations and the respective place of non-pharmacological treatments, paracetamol and/or NSAIDs, as well as other therapies.

The Arthro-Scan Questionnaire (see Appendix) was distributed between September and October 2002 to 5,500 practitioners (4,000 general practitioners and 1,500 rheumatologists), across every one of the different French regions, with the support of Bristol-Myers-Squibb company representatives. However, neither the EULAR recommendations nor any commercial support was advocated in this questionnaire. The survey was conducted over a 2-month period. The practitioner had to complete and to send back the questionnaire in due time. Any questionnaires received after the deadline were not analysed. The questionnaires were numerically coded to ensure confidentiality. The statistical analyses were performed using Excel software (Microsoft Inc., Seattle, Washington).

Results

A total of 3850 questionnaires (70% response rate) were returned and 3,491 questionnaires could be analysed (359 questionnaires were incomplete or improperly completed). 194 questionnaires were sent back after the deadline and therefore were not analysed. Because the response rate of the rheumatologists was low (33%; n=491) and may not have been representative of the

group, compared with the 75% response rate of the GP group (n=3000), only the results from the GP group are presented.

Additional examinations requested by GPs

Laboratory tests (sedimentation rate, blood count). In stage 1, representing a patient with a non-inflammatory condition, 17.2% of GPs prescribed blood tests. This percentage increased for the two other conditions (stages 2 and 3), reaching up to 59.2% of GPs in stage 3 (Fig. 1).

New X-rays. In the first clinical stage, although the hypothetical patient had undergone radiography within the previous 6 months, 28.2% of GPs requested new radiographs. For the stage 2 patient, 39.8% of the GPs requested new radiographs, and for the stage 3 patient 37.8% did so (Fig. 1).

Request for echography, arthrography, tomodensitometry or magnetic resonance imaging. The number of such requests was extremely low for stage 1 (mechanical pain). More than 80% of practitioners never requested such examinations whatever the clinical situation. The requests increased in the second clinical situation: 11.1% for echography, 4.9% for arthrography, 5% for TDM and 7.9% for MRI. For the stage 3 patient, there was a more frequent request for MRI (15.2%), i.e. 2 times more often compared with the stage 2 and 10 times more often compared with the stage 1 patient (Fig. 1).

Finally, some practitioners judged that new clinical imaging or blood tests were not useful, whatever the stage of the patient. For the stage 3 patient, 10.5% GPs did not request any examination (responding "none" to the item "other").

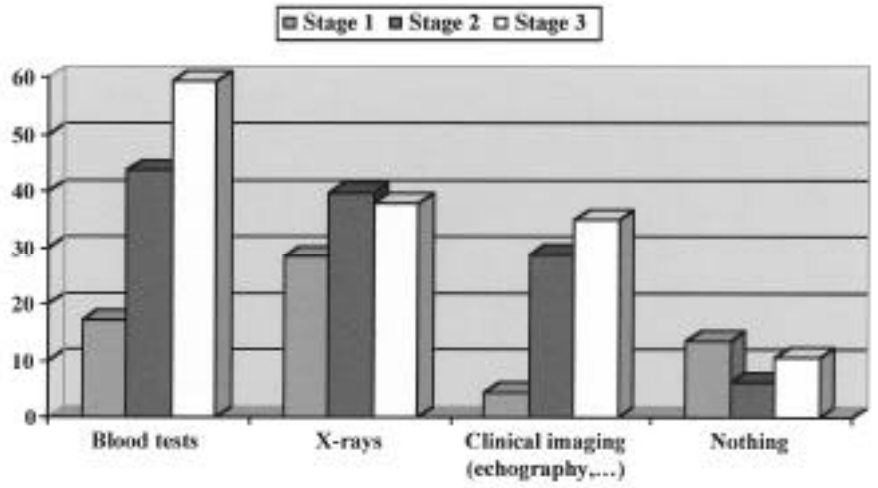

Fig. 1. Request for examinations by GPs, expressed as the percentage of responses as a first-line approach in a patient with knee OAin the 3 clinical stages (multiple answers were allowed).

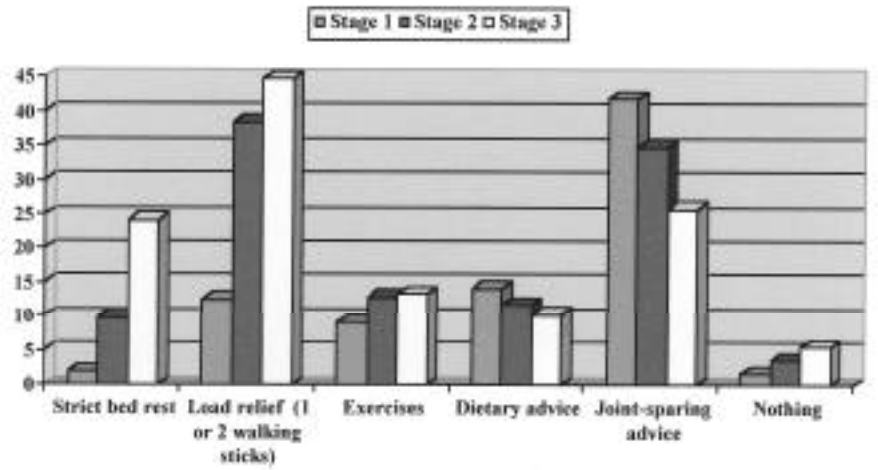

Fig. 2. Non-pharmacological therapies prescribed by GPs, expressed as the percentage of responses as a first-line approach in a patient with knee OAin the 3 clinical stages (multiple answers were allowed).

What is the first line therapeutic approach ?

Multiple choices in terms of therapies, mixing non-pharmacological and pharmacological treatments, were proposed to the practitioners.

Non-pharmacological approaches. This included bed rest, walking sticks, exercise + physiotherapy, dietary education, and education in terms of ways to reduce joint strain (results are summarized in Fig. 2). Recommendations for bed rest and use of walking sticks increased with severity of the disease. Only 1.8% of GPs recommended bed rest in stage 1 and 24.1% in stage 3. Similarly, the proportion of practitioners who recommended the use of walking sticks reached 12.5% for stage 1, 38.5% for stage 2 and 44.8% in the case of acute exacerbation (stage 3). Only 9% of the GPs considered exercise to be helpful in stage 1 and this percentage was below 15% whatever the clinical stage. Although patient education appeared to be a key point in the management of stage 1 disease, only a low percentage recommended weight loss (14.1%), whereas in stages 2 and 3 those recommendations seemed less appropriate as a first-line approach. Reduction in joint strain was more often prescribed in stage 1 (41.9%) and this percentage decreased in situations 2 and 3.

Pharmacological approach. Treatments proposed in the questionnaire included paracetamol, paracetamol + codeine in combination, NSAIDs, symptomatic slow-acting drugs, and intra-articular injections of hyaluronic acid or corticosteroids (results are summarized in Fig. 3).

The use of paracetamol as a first-line agent is confirmed in stage 1 (89.7%) in keeping with the EULAR recommendations. The proportion of this prescription decreased in stage 2 and 3. Whatever the clinical stage, a systematic intake of paracetamol (60-70% of

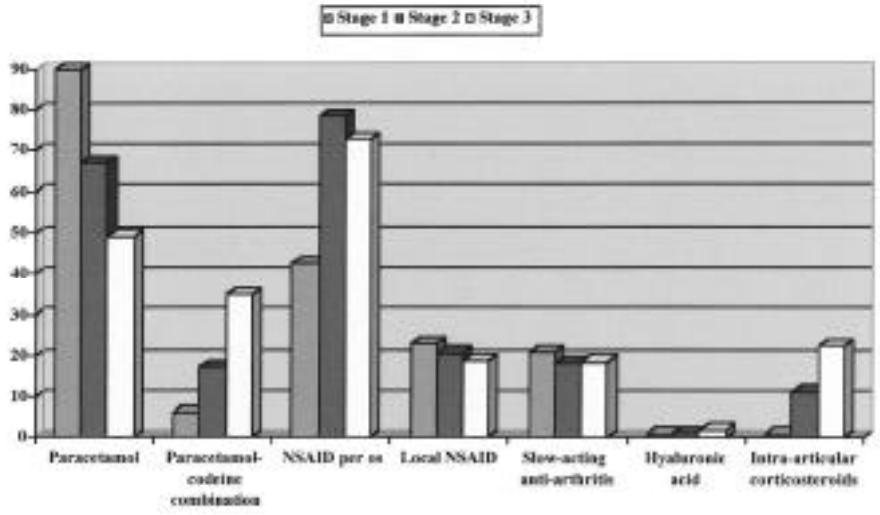

Fig. 3. Pharmacological therapies prescribed by GPs, expressed as the percentage of responses as a first-line approach in a patient with knee OAin the 3 clinical stages (multiple answers were allowed).

GPs) and a daily dose of 3 to 4 g of paracetamol (90%) were recommended. Two-thirds of GPs (66.5%) gave preference to 4 g/day of paracetamol. The duration of paracetamol treatment was between 2 and 4 weeks whatever the clinical stage, but slightly augmented with the disease severity (Fig. 4).

Concerning the prescription of NSAIDs, it is worth noting that in the patient with mild mechanical pain (stage 1) nearly half of the GPs (42.8%) ordered an NSAID in addition to paracetamol as the first-line approach. In stages 2 and 3, more than 70% of GPs gave a preference to NSAIDs (Fig. 3). The duration of NSAID prescription varied from 1 to 4 weeks, with a preference for one week in stage 1 (32.7%), and 2 weeks (40%) in stage 2 and stage 3 (35%) (Fig. 5).

The proportion of prescriptions of paracetamol + codeine increased from stage 1 to stage 3 (34.9%). The prescription of topical NSAIDs was remarkably similar whatever the disease stage, being recommended by about 20% of GPs. Symptomatic slow-acting drugs were recommended by around 20% of GPs whatever the clinical condition. Only a few GPs recommended HA injections (1–2%).

Finally, when faced with a case of acute inflammatory exacerbation, only 22.3% of GPs recommended IA injections of corticosteroids. However, about one-third (35.7% for stage 2 and 23.6% for stage 3) stated that they never performed synovial fluid puncture.

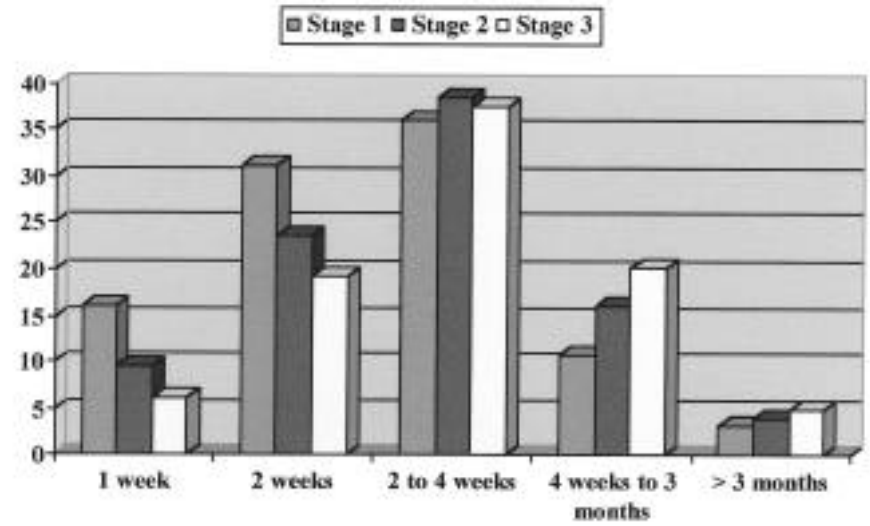

Fig. 4. Duration of paracetamol prescription by GPs in a patient with knee OAin the 3 clinical stages.

Discussion

Our survey is the first large-scale questionnaire (3,000 answers, with a response rate of more than 70%) investigating how painful knee OA is managed by French GPs. A previous questionnaire survey had been conducted among physicians from European countries, but the low response rate (10% response rate for 40,503 mailed questionnaires) hampered its interpretation (5,6). The most interesting aspect of this survey was that it compared its results to the 2000 EULAR recommendations.

Firstly, it was found that the GP's approach to handling and treating a patient does change with the patient's clinical status. This is in line with the 2000 EULAR recommendation (n° 1) ("treatment of knee OA should be tailored to the individual patient, taking into account factors such as age, comorbidity and inflammation") (4). However, whether or not all practitioners interpreted stage 3 as an exacerbation flare of knee OAis unclear.

Imaging or laboratory examinations were widely requested even for stage 1 disease (28%), though it would not appear to be justified in such cases. This percentage increased as pain increases, to 37.8% for the stage 3 patient. The reason why they requested new imaging or blood tests was not investigated, but might reflect interrogations on the radiological evolution of OA or diagnostic uncertainty. Requests for TDM, echography or MRI were low (≤ 1%) in stage 1, increased in stage 2 (10.2%) and in stage 3 (15.2% who requested MRI). The cost effectiveness and utility of such examinations is very questionable. The requests may reflect the clinicians'diagnostic uncertainties, notably in the case of an acute exacerbation of the disease.

One intriguing result was that bed rest is still recommended (not often in stage 1, but 24.1% in stage 3) even there is

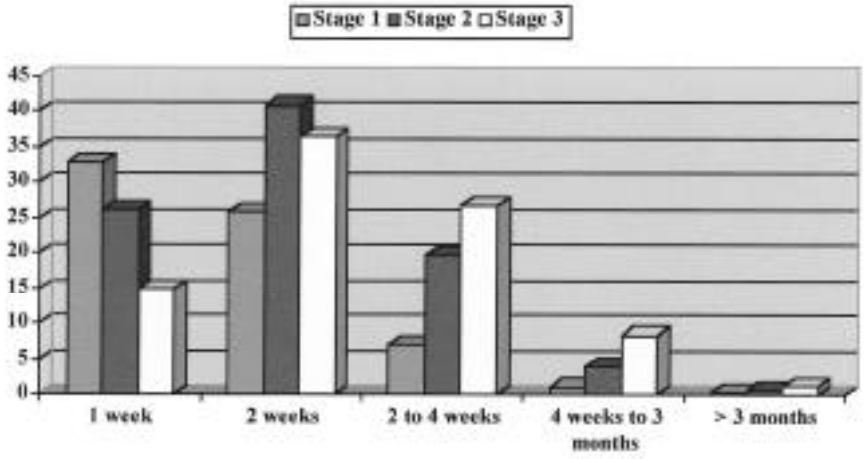

Fig. 5. Duration of NSAID prescription by GPs in a patient with knee OAin the 3 clinical stages.

no way to justify this outdated recommendation for knee OA.

The most interesting result concerns the non-pharmacological treatments, which are under-utilized as a first-line treatment. Notably, in stage 1 the recommendation for exercise was low (9%), even though this has been demonstrated to be beneficial (7, 8). Similarly, dietary advice is rarely recommended, although several studies have shown that weight loss can prevent the occurrence of knee OA and improve the OA patient's clinical status (9, 10). Finally, advice to spare the painful joint (avoidance of running, standing for long periods of time, and sports activities such as tennis, football, etc.), formed part of the patient's education and was prescribed by about half of the physicians (41.9%) in stage 1. This is a key issue, as education may account for the reduction in analgesic and NSAID consumption (11,12). Future recommendations should certainly emphasize those therapeutic modalities.

EULAR recommendation n° 8 concerning paracetamol as the first-line drug in the management of knee OA without exacerbation flares was correctly followed by more than 85% of the GPs. The majority recommended a dose of 3-4 g per day and the duration of treatment tended to increase with the severity of pain. However, it is noteworthy that even when there was no clinical sign of severity (stage 1), 42% of GPs also recommended NSAIDs as a first-line treatment, in contradiction to the 2000 EULAR recommendation n° 9 which states that: "NSAIDs (oral or topical) should be considered in patients (with effusion) unresponsive to paracetamol". This suggests that the respective roles of paracetamol and NSAIDs are still not very clear for many physicians (13). Even if some recent studies seem to indicate a superior efficacy of NSAIDs over paracetamol in patients with severe knee OA, the risk-benefit ratio of NSAIDs (including COX-2 selective inhibitors) should always be considered on a case by case basis (14-20). Recent EULAR 2003 recommendations (not yet published at the time of this survey) concerning NSAIDs contain no fundamental changes although they do introduce a new recommendation for coxibs, especially in the case of patients with a risk of gastrointestinal side effects (21). It is tempting to conclude that when a patient is not responsive to paracetamol, some physicians add NSAIDs while other switch to NSAIDs and while others prefer stage 2 analgesics.

In stage 3 (acute exacerbation with synovial fluid effusion), an intra-articular (i.a.) injection of corticosteroids (CS) is recommended (2000 EULAR recommendation n° 3). However, the benefit of CS injections is limited to 2-4 weeks, and the presence of synovial fluid effusion is not always predictive of the response (22,23). French GPs are often not trained to perform joint puncture: 35.7% admitted than they never practice this procedure. Similarly, 56% of GPs from Northern Ireland do not currently perform joint injections (24). In cases of acute exacerbation of knee OA, sparing the painful joint from load bearing is widely applied by French GPs (44.8%), although this therapeutic approach has not yet been validated (25). Treatment with hyaluronic acid is not widely accepted as a first line approach by GPs. The fact that in France they are usually prescribed by rheumatologists and orthopaedic surgeons may explain this result. Anyway it is more commonly regarded as a second line therapeutically approach (with conflicting results) recommended by the EULAR 2000 consensus (4, 26, 27). Symptomatic slow acting drugs have the preference of only 21.1% of GPs. Owing to the long delay of action of those drugs (at least 2 weeks), it is all the more surprising that 18.6% of GPs recommend them, in presence of clinical signs of joint inflammation.

Our study contains several factors that may limit its interpretation. (i) Although the response rate was high (70%), suspicion may be raised concerning the number of non-responders, which may have influenced the final result; (ii) The support of a non-independent firm involved in the marketing of paracetamol is always questionable, although caution was taken that in no way was the product mentioned in our questionnaire or even suggested, and the practitioners did not receive any financial support for their participation in this survey; (iii) One important limitation is the individual interpretation made by each physician of the clinical stages; (iv) We chose not to rank the responses as first versus second choice in order to allow co-prescription as a first-line approach. However, this could have introduced some confusion in the way in which the responses might be interpreted. For example, for stage 1 where half of the GPs recommended paracetamol+NSAIDs, we do not know whether they intended the administration first of paracetamol and then NSAIDs, or whether they meant a combination of both drugs as a first therapeutic approach. (v) Otherwise, weight

loss may not have been considered in a non-overweight patient.

In conclusion, the results of this survey are in good agreement with the EULAR 2000 recommendations. A major finding was the under-utilization of non-pharmacological approaches by GPs, which needs to be modified by medical education.

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Appendix

In these 3 clinical stages

1. A 58 year old patient, of normal bodyweight, suffering from an internal femoro-tibial knee osteoarthritis confirmed by X-ray, has come for a consultation about her moderate level of pain. This is purely mechanical and occurs when she walks. There are no gastro-intestinal history and the most recent X-ray is six months old.

2. The patient comes back to see you 3 months later with the same condition in terms of intensity and frequency but with a moderate “cold” joint effusion when examined.

3. The patient comes back to see you 6 months later with a significantly increased level of pain and night-time recurrence. It takes her over 30 minutes to sort herself out each morning and a clinical examination reveals stiffness and major joint effusion in conjunction with a moderate increase in local heat and pain when mobilising the knee. This is generally consistent with an attack of knee osteoarthritis of the knee.

Do you prescribe one or more of the following additional tests?

- ❑ Differential blood count and Sedimentation Rate
- ❑ X-ray of the painful knee from the front and the side
- ❑ Comparative X-ray of both knees from the front and from the side
- ❑ Ultrasound (looking for an effusion)
- ❑ Knee arthrography
- ❑ Knee tomodensitometry
- ❑ MRI of the knee
- ❑ Other (please specify)

Do you carry out or request a joint tap for analysis purposes?

- ❑ Systematically
- ❑ If in doubt
- ❑ Only if the fluid had not been examined during the previous attack
- ❑ I never carry out joint taps.

What is your first treatment prescription? (Tick as many as apply)

- ❑ Strict bed rest
- ❑ Load relief using one or two walking sticks
- ❑ Prescription for paracetamol
- ❑ Prescription for a paracetamol-codeine derivative combination
- ❑ Prescription for a non-steroidal anti-inflammatory per os (whatever the category concerned)
- ❑ Prescription of a local non-steroidal anti-inflammatory
- ❑ Prescription of a slow-acting anti-arthritis medication
- ❑ Prescription for hyaluronic acid
- ❑ Intra-articular infiltration of corticosteroids
- ❑ Rehabilitation and exercices
- ❑ Dietary advice
- ❑ Joint-sparing advice
- ❑ Other (please specify):

If you prescribe a non-steroidal anti-inflammatory *per os, how long does this treatment last?*

- ❑ 1 week
- ❑ 2 weeks
- ❑ 2 to 4 weeks
- ❑ 4 weeks to 3 months
- ❑ More than 3 months

If you prescribe a non-steroidal anti-inflammatory *per os*, do you state on the prescription:

- ❑ To be taken at regular intervals (e.g. 1 tablet twice daily)
- ❑ On demand (if in pain)

If you prescribe paracetamol, how long does this treatment last?

- ❑ 1 week
- ❑ 2 weeks
- ❑ 2 to 4 weeks
- ❑ 4 weeks to 3 months
- ❑ More than 3 months

If you prescribe paracetamol, do you state on the prescription:

- ❑ To be taken at regular intervals (e.g. 1 tablet three times daily)
- ❑ On demand (if in pain)

Regarding this paracetamol prescription, what total daily dose do you prescribe?

- ❑ 1 gram per day
- ❑ 2 grams per day
- ❑ 3 grams per day
- ❑ 4 grams per day
- ❑ Other (please specify):

Questions for General Practitioners
Do you refer your patients to rheumatologists for osteoarthritis treatment?

Questions for Rheumatologists
Do your general practitioner contacts refer patients to you for osteoarthritis treatment?

- ❑ No, never
- ❑ Yes, sometimes
- ❑ Yes, frequently

If yes, on what grounds ?

- ❑ Difficult diagnosis
- ❑ Acute exacerbation
- ❑ Joint tap and/or infiltration
- ❑ If the joint proves resistant to initial and properly followed treatment
- ❑ To discuss a joint lavage
- ❑ To prescribe insoles
- ❑ To initiate a rehabilitation and joint protection programme
- ❑ To discuss surgery options
- ❑ Other (please specify):

Please indicate :
Your age
Practice location: Rural; Semi-rural; Town <100 000 or >100 000 inhabitants; Hospital; Self-employed.