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"It looks after me": how older patients make decisions about analgesics for osteoarthritis

Milder T, Lipworth W, Williams K, Ritchie J, Day R. 2011

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ABSTRACT

Objective: To explore the key motivators behind selection of analgesics (non-steroidal anti-inflammatory drugs (NSAIDs), paracetamol and complementary medications (CMs)) by patients with osteoarthritis (OA).

Methods: A qualitative study, in which in-depth semi-structured interviews were conducted with 15 OA patients, recruited from four general practices in Sydney, Australia. Patients were aged 65 or above, and were currently taking, or had recently taken, an NSAID for osteoarthritis.

Results: Three key themes emerged from the data: *reliance*, *routine* and *pill load*. *Reliance*: Patients were strongly reliant upon NSAIDs because they consistently satisfied their needs. By contrast, they were much less reliant upon paracetamol because of uncertainty or scepticism about its effectiveness. They were not reliant upon CMs but were willing to take them indefinitely because they were perceived as being without risk. *Routine* and *pill load*: Many patients took an NSAID, as well as CMs as part of a 'daily routine'. By contrast, patients had difficulty developing a routine around using paracetamol at the recommended maximum dose because of the implicit frequency of dosing required and an aversion to the associated 'pill load'.

Conclusion: The results highlight the importance of exploring the perceptions and preferences of patients with regard to analgesics for OA. Clinician advice regarding analgesia for OA should take account of the possible reliance of the patient upon an NSAID, their medicine routines, and their potential concern about the pill load associated, in particular, with paracetamol.

KEY POINTS

- Osteoarthritis patients held different attitudes towards NSAIDs, paracetamol and complementary medications (CMs), preferring NSAIDs over alternatives
- Three key themes emerged from the data to explain this preference: 1) reliance on NSAIDs, 2) resistance to the 'pill load' of paracetamol and 3) the ability to establish a routine around use of NSAIDs and CMs
- By exploring these motivations, clinicians may promote greater adherence to clinical practice guidelines for osteoarthritis.

INTRODUCTION

With the ageing population, OA is predicted to become the fourth leading cause of disability in the world by 2020 (1). Two common pharmacological treatments for OA are paracetamol and NSAIDs. NSAIDs have been shown to have an efficacy advantage compared with paracetamol in clinical trials (2,3). However, whereas paracetamol at maximum dose (4 g/day) is relatively safe, NSAIDs (both non-selective and COX-2 selective agents) have a range of serious adverse effects, particularly affecting those aged 65 and above. These include gastrointestinal ulceration, myocardial infarction, stroke, hypertension, renal impairment and cardiac failure (4-6). Among patients over the age of 65, non-aspirin NSAID-related peptic ulcer disease contributes to a considerable number of hospitalizations each year (7).

Due to the different safety profiles of these treatments, most clinical practice guidelines recommend a stepped care approach to OA, with paracetamol being used as initial pharmacological therapy after trial of non-pharmacological interventions (5, 8-10). In patients whose symptoms are not controlled by paracetamol at the maximum recommended dose, then the guidelines suggest that an NSAID may be a suitable alternative to pharmacotherapy depending on the individual patient's risk profile (5,8-10). The limited data that exist concerning adherence to these clinical practice guideline recommendations suggest that there is an under-utilization of paracetamol and an inappropriately high usage of NSAIDs (11-13). It is important to understand the factors contributing to this pattern of usage given the high prevalence of OA and the potential for serious NSAID-induced toxicity in the elderly (14). Many of these factors will only be discerned by greater focus on the perceptions and experience of the patient.

In addition to traditional pharmacotherapy, complimentary medications, such as glucosamine and chondroitin, are widely used by patients to manage the symptoms of OA (12,15). While little is known about why patients use CMs in OA, we do have some knowledge of why people use, or reject the use of, paracetamol and NSAID.

A study by Barozzi and Tett involving patients and health professionals found that the key barrier for consumers using paracetamol was a lack of awareness that this medicine could be used as long-term treatment for OA (16). Conversely, health professionals believed consumer perceptions of

ineffectiveness and number of tablets (taking up to eight tablets of paracetamol daily) were important impediments to patients taking paracetamol.

A number of studies have explored the reasons patients use NSAIDs for OA. These studies have shown that patients take an NSAID to comply with advice given by the doctor, but also importantly because pain relief and function are paramount (17-20). Additionally, patients are unsure as to whether other medicines, such as paracetamol, are more effective or safer than their current NSAID (17).

In our previous publication based upon the same dataset, it was identified that patients disengage from risk-related information and also modulate their perception of risk (21). This minimization of the potential for harm associated with use of NSAIDs allows a focus on the obvious benefits (analgesia, improved function) and, therefore, a favorable benefit over risk conclusion.

The focus of our previous study was the perceptions of risk associated with use of NSAIDs in patients with OA (21). In the present study, we interrogated our data further with the aim of exploring what motivated patients to select a particular analgesic (NSAID - including COX-2 selective NSAID, paracetamol and/or CMs).

PATIENTS AND METHODS

As described in our previous publication, sampling was purposive with patients being recruited from four general practices located in Sydney, Australia (21). Patients were included if they had been diagnosed with OA by their general practitioner/specialist, were aged at least 65 years, were taking or had taken in the past 2 years an oral NSAID for OA, were cognitively unimpaired and were able to converse reasonably in English. This group of patients was selected because a substantial proportion of OA is managed in primary care and older individuals represent the majority of OA sufferers, and as well are at greatest risk for NSAID toxicity (22,23). Patients who met the inclusion criteria were invited by their general practitioner to participate in the study. There was no clinical relationship between the researchers and participating patients. As this study was initially conceptualized as an examination of attitudes towards NSAIDs we did not deliberately include or exclude patients on the basis of their use of paracetamol or CMs.

In-depth, face-to-face, semi-structured interviews (45–60 min) were conducted by the same researcher (T.Y.M.) over 3 months. As part of the interview, participants were asked about their reasons for using or rejecting specific OA medicines, including NSAIDs, paracetamol and CMs. The perceptions of patients regarding the effectiveness and safety of these medicines were also explored. Participants were asked about their risk factors for specific NSAID-related adverse effects. Data collection was iterative with data analysis, enabling progressive refinement of topics discussed (24).

Using the same interview data that had already been digitally recorded, de-identified and transcribed, we interrogated the data from the perspective of our new research question: ‘what motivated these patients with OA to use or reject a particular analgesic?’ Using the analysis process of Charmaz (25), our initial coding involved line-by-line analysis for emergent themes. Similar themes were grouped together

into categories and abstracted into concepts. These codes, categories and concepts were constantly compared across transcripts and refined until saturation was reached (that is, that no new themes were emerging and all themes were accounted for by existing concepts). Initial coding was undertaken by T.Y.M, who kept detailed memos in keeping with the principles of grounded theory. A second researcher (K.M.W.) independently analysed

focal sections of interview transcripts and met with the primary researcher to ensure the emergent ideas were grounded in the data. Two researchers (T.Y.M and W.L.) developed the initial categories and all researchers contributed to the development of concepts from the codes and categories.

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RESULTS

Interviews were conducted with fifteen patients (see Table 1). *Reliance, routine, and pill burden* were found to be key themes accounting for the preferred use of NSAIDs over paracetamol at the recommended therapeutic dose. These themes were also central to the use of CMs by patients.

Table 1: Participants' details	
	Number of participants
Age range	
65-69	4
70-79	7
80-89	4
Gender	
Female	8
Male	7
Country of birth	
Australia	9
Other (England, Scotland, Czechoslovakia, Ukraine, Netherlands)	6
Education	
Intermediate certificate (Year 10)	5
Leaving certificate	8
Post-graduate studies	2
Occupation	

Professional	7
Trade	6
No history of employment	2
NSAID use	
Current use	13
Past use	2
Current or past use of a non-selective NSAID (diclofenac (5), ketoprofen (1), peroxicam (1))	7
Current or past use of a COX-2 selective NSAID (celecoxib (4), meloxicam (4))	8
Risk factor/s for NSAID-related Adverse effects	14
Paracetamol use	
Current use	11
Past use	2
No history of use	2
Use of CMs	
Current use (glucosamine, chondroitin, fish oil, and/or magnesium supplement)	9
Past use	3
No history of use	3

Reliance

Patients believed that their NSAID was consistently effective and doubted that they would respond as well to other analgesics. Experience affirmed that an NSAID was the most suitable analgesic for *them*, exemplified by one patient's phrase:

"It [diclofenac] looks after me" (Male, aged 82).

In this way patients were reliant upon their NSAID, depending heavily on the pain relief provided by the medicine.

"After two to three days with two [diclofenac] a day... all my joints are right again, it's just like getting a grease and oil change. It is very effective on me." (Male, aged 65)

“Sometimes... you rush out... and by about 9:30 I know I haven’t taken it [ketoprofen]. Everything aches and um so I usually just drop everything and go back home and grab them. It’s that pronounced yeah.” (Male, aged 69)

“The only thing I need or like is this [diclofenac].” (Male, aged 65)

The belief by patients in the superiority of their NSAID over other classes of analgesics led a few patients to continue taking an NSAID despite developing adverse effects. However, in order to justify their continued use, they limited the frequency of dosage and/or each dose to reduce the severity of adverse effects.

“I have high blood pressure and... I used to have an ulcer... but when I really have pain I use it [meloxicam].” (Female, aged 73)

The above patient had difficult-to-control hypertension. Instead of properly trialing paracetamol, as advised by her general practitioner, she decided to continue to take meloxicam, but only for two weeks of every month.

“My doctor told me instead of [meloxicam] to use [paracetamol]. I started to use it but it didn’t help like [meloxicam]... I just took it for a few days and after I stopped.” (Female, aged 73)

The reliance upon an NSAID was also demonstrated by some patients who continued to take an NSAID despite being concerned about the withdrawal of rofecoxib from the market. Rofecoxib was voluntarily withdrawn from the pharmaceutical market by the sponsor in 2004 due to safety concerns of an increased risk of cardiovascular events (5). In addition, some patients rejected the advice of friends to discontinue NSAID use.

“A lot of people say: ‘You don’t take [diclofenac]’, and I say: ‘Yes I have, and I have been quite happy with it for quite a few years’.” (Male, aged 82)

There was only one counter-example, a patient who was reliant upon meloxicam yet ceased it, in part, because of fears about the safety of NSAIDs stemming from the rofecoxib withdrawal, albeit their effectiveness was not in question.

“They [NSAIDs] are brilliant really and then they stop pains and everything... and if they hadn’t... been such stuff in the papers about how bad they were, well you know I probably would have kept on taking them.” (Female, aged 78)

In contrast to NSAIDs, reliance was not clearly evident in relation to paracetamol. While patients taking paracetamol acknowledged that it had a role in the treatment of OA, as suggested by their general practitioner, its importance was generally perceived as less than that of their NSAID. Furthermore, while they spoke enthusiastically about the effectiveness of the NSAID, they appeared to be less certain that paracetamol was effective.

“She [general practitioner] doesn’t like [celecoxib] taken all the time... she prefers Panadol® Osteo as something regular.” (Female, aged 73)

“If it is not bad I take [paracetamol], if it is really bad I... take [diclofenac].” (Female, aged 72)

“[Paracetamol] Nowhere near as effective.” (Male, aged 69)

Indeed, some patients were so sceptical about the effectiveness of paracetamol they decided not to trial it or to prematurely cease using it.

“I don’t think they [paracetamol] do much for me. They might...I have never tried to use them.” (Male, aged 65)

Many patients were taking glucosamine, chondroitin and/or other CMs alongside NSAIDs and/or paracetamol. Similar to paracetamol, their reliance upon CMs was not as strong as their reliance upon their NSAID. Despite being sceptical about the effectiveness of these medicines, most patients were willing to take them indefinitely because they perceived them to be *possibly* beneficial while ultimately considering them harmless.

“I figure if it [glucosamine] doesn’t make any difference it’s not going to do any harm.” (Male, aged 69)

“I do take chondroitin and glucosamine, but it doesn’t do anything. I am sure it doesn’t but I take it anyway, it is supposed to be harmless... Somebody put me onto that but I think it is a waste of money.” (Male, aged 65)

Routine

Daily routine was another important determinant of the use of NSAIDs, paracetamol and CMs by patients with OA. For some patients, taking an NSAID was a comfortable daily practice. As these patients took their NSAID routinely, they did not question their use of this medicine and instead assumed it would continue indefinitely.

“I can’t say I have started worrying about it, it is just an accepted thing, I take my [diclofenac] every morning and I take one at night before I go to bed.” (Male, aged 82)

“I was more than happy with them [ketoprofen] so why change... So it’s just a routine, every four months or so I get another prescription.” (Male, aged 69)

The reliance of patients on the NSAID and the routine of taking the medicine appeared to be mutually reinforcing. As they were reliant upon the NSAID, they took it routinely, and this in turn strengthened the reliance. Routine, therefore, was integral to ongoing NSAID use, along with efficacy-based reliance.

Similar to their use of an NSAID, patients had become accustomed to taking glucosamine, chondroitin and/or other CMs every day. Consequently, as with NSAIDs, they were resistant to changing this routine but the rationale was different; a view of inherent safety with potential but not certain benefit.

“Well it’s [glucosamine] not doing me any disadvantages by taking it. It’s all just part of the routine.” (Male, aged 69)

“So, I think oh well what’s one pill more or less so I pop the glucosamine. It seems a bit silly in a way, but yeah, who knows?” (Female, aged 73)

“I will continue taking it [glucosamine]. Um, hopefully somewhere... in the system it does some good, I don’t know.” (Male, aged 67)

Pill load

By contrast, patients had difficulty developing a routine around paracetamol use at the recommended maximum daily dose. Only two of the thirteen patients using this medicine were taking the maximum dose. Patients disliked the idea of taking 6 or 8 tablets daily (Panadol® Osteo or regular paracetamol, respectively) of a single medicine. They associated the ‘pill load’ with being a “pill popper”. It was also associated with weakness of character and they believed that they should instead tolerate the pain. Others questioned the safety of taking 6 to 8 tablets per day and worried about the development of tolerance.

“I just don’t like to take six... that is a lot of medication, um, supposedly it’s quite safe to take six a day... do you know if they are quite safe to take six a day?” (Male, aged 67)

“He [general practitioner] said ‘you can take up to eight [paracetamol] a day’ but I have never taken eight. It just seems like an awful lot to me. I have taken perhaps four.” (Female, aged 68)

DISCUSSION

The present study provides an interesting comparison between three classes of medicines widely used to manage the symptoms of OA, each of which is perceived differently in terms of effectiveness, need, ease of routine and perceived pill load. This comparison is illustrated in Table 2.

Table 2: Perceived effectiveness of, reliance upon, routine and perceived pill load associated with the use of NSAIDs, paracetamol and CMs for OA			
Feature of analgesic class	NSAIDs	Paracetamol	CMs
Perceived effectiveness	High	Low to moderate	Low
Degree of reliance	Strong	Low to moderate	Low to moderate
Strength of routine	Strong	Very low	Moderate
Perceived pill load	Low	High	Low
Overall effect on behaviour	Regular use	Use at less than maximum dose or non-use	Regular use

The findings of the present study extends previous research by showing that *reliance*, *routine* and *pill load* are further contributors to use of NSAIDs in OA, and impediments to use of paracetamol (17-20). In this regard, our findings differ from those of Barozzi and Tett who did not find scepticism towards the effectiveness of paracetamol and pill load to be barriers to paracetamol use among consumers (16). Interestingly, these were the reasons cited by general practitioners and pharmacists in their study about the reasons for paracetamol under-utilisation.

Exploration of the perceptions of OA patients with respect to use of glucosamine, chondroitin and/or other CMs is a relatively new and important area of inquiry. In keeping with our results, Mikhail et al found that many of the patients in their focus group used glucosamine but none found it effective (19). Our study provides an explanation for this by demonstrating the power of routine in determining medicine use. The willingness of patients to take CMs despite being sceptical about their effectiveness suggests that patients have very different expectations of CMs compared to non-CMs, much of this relating to the perception that so called 'natural' is 'safe' or 'good' (20).

Interestingly, the themes of reliance and routine emerged from a group of older patients which included those averse to medicines in general. As focused upon in our previous research (21), some patients disliked taking medicines because of fears surrounding toxicity and addiction. This is a common finding in research on analgesia in OA and medicine-taking in general (20, 26-29). In the present study, regardless of whether they were skeptical about using medicines, patients were reliant upon their NSAID and took it routinely. This suggests that the benefits a patient derives from an NSAID may outweigh their general concerns about medicines. It was also interesting to note that our participants included patients who had never used another NSAID for OA in the past (n=5), those who had used one

other NSAID (n=5) and those who used two or more other NSAIDs (n=5), and, therefore, that these medication histories did not appear to have a bearing on the emergent themes.

Implications for adherence to clinical practice guidelines

Clinical practice guidelines are generally based on what is accepted to be the best available evidence, i.e. stemming from meta-analyses of randomised controlled trials (RCTs). It is well known, however, that in practice it is difficult to adhere to clinical practice guidelines because they do not reflect the complexity of clinical decision-making and are not always congruent with the preferences of patients and doctors (30,31); factors which are infrequently addressed within the context of the trials which underpin clinical practice guidelines. The present study highlights the complexity behind non-adherence to clinical practice guidelines in the context of the pharmacological management of OA. Our findings suggest that non-adherence is not simply a matter that clinicians are not aware of guidelines or that patients do not understand the recommendations of clinicians. While patients in this study were encouraged to take paracetamol at the maximum dose by their general practitioner, they were uncomfortable with this practice. Some, who were advised to limit their use of the NSAID, nevertheless continued with this medication because of its proven effectiveness. Consequentially, they took an NSAID as part of a daily routine. This finding suggests that personal experience, at least for some patients, may be a more important determinant of analgesic use in OA than advice from a medical practitioner.

Clinical/communication implications

The resistance of patients to take paracetamol at the recommended maximum dose and their routine use of NSAIDs have potentially important implications for patient safety. Judicious use of NSAIDs for OA is crucial given the high prevalence of cardiovascular, gastrointestinal and renal comorbidities, as well as polypharmacy, amongst older patients (14,23,32). If patients are not willing to trial paracetamol or are taking suboptimal doses, then they are more likely to initiate NSAID therapy, as well as take larger doses of NSAIDs. Furthermore, the practice of patients persisting with NSAID therapy despite the occurrence of adverse effects is potentially hazardous. It must be accepted, however, that the close temporal relationship between dosage of an NSAID and clinical benefit reinforces 'routine' as does the convenience and lesser pill burden for NSAIDs as compared to paracetamol.

The reasons for non-adherence to clinical practice guidelines are more complex than generally acknowledged, and, therefore, improving adherence is a difficult task. The findings of the present study, nonetheless, provide some guidance as to how to achieve this outcome through improved clinician-patient communication. If a clinician finds that a patient is not yet reliant upon an NSAID, then there is an opportunity for the doctor to encourage paracetamol at maximum dose. The clinician could also explore any fears relating to this practice and provide reassurance. If, on the other hand, a patient is already reliant upon and comfortable with the routine of taking an NSAID, then the clinician could be sympathetic to the difficulty of altering the patient's regimen, but firm about the importance of changing a routine deemed to be potentially dangerous. To facilitate this, the clinician could encourage the patient to trial both a gradual reduction in NSAID dose and an introduction of a safer alternative, such as paracetamol. In settings such as Australia in which patient-centred care and shared decision-making are promoted as part of the "quality use of medicines", such discussion needs to take into consideration both patient values and clinical practice guidelines (33). In these and comparable settings,

a shared decision to use an NSAID and/or paracetamol in a way that is not entirely consistent with guidelines might be both clinically and ethically appropriate.

Ultimately, our research highlights the importance of clinicians exploring the perceptions and preferences of patients about analgesic use in treating OA. Research suggests that this facet of management is too infrequently addressed in general practice; instead, practitioners make assumptions about the medication preferences of their patients, thus precluding shared decision-making (34). If doctors do not realise how reliant a patient is upon use of an NSAID, or fail to recognise the concerns about lack of effectiveness and pill load with regard to paracetamol, then they cannot effectively communicate about or support safer analgesic use.

Limitations

We explicitly sought to interview patients who were taking, or had recently taken, an NSAID for OA. Therefore, the emergent themes, reliance, routine and pill load, may be less pertinent to OA patients who use NSAIDs on a less regular basis and those who use over-the-counter and/or topical NSAIDs. Patients who are comfortable with use of paracetamol at maximum dose presumably have different views about the effectiveness of paracetamol and the ease or difficulty of taking paracetamol (at maximum dose) routinely. Diverse perceptions might also emerge from a selection of younger patients. Each of these considerations warrants further investigation. Nonetheless, these findings are likely to have very relevant implications for other elderly patients with OA. Furthermore, the themes here elicited may be powerful motivators for use of different drug classes for conditions other than OA.

Future directions

Future research might include a larger study of older-aged OA patients, with a particular focus on those who are taking paracetamol at maximum dose with or without an NSAID (in order to discover factors that facilitate adherence to the clinical practice guideline recommendation) and those who are using only paracetamol and/or CMs so as to examine possible deterrents to NSAID use. It would also be useful to recruit a group of OA patients with severe pain not using any analgesics (i.e. neither paracetamol nor NSAIDs) to discover factors that prevent reliance upon and routine use of analgesics. Other research might involve recruiting patients with different severity, sites and duration of OA to examine what effect these factors have on choice of analgesic and the prominence of the themes of reliance, routine and pill load. Other variables of interest would include medication history (e.g. comparing patients who have only used one kind of NSAID with those who have used many) and level of education and health literacy.

It would also be interesting to explore with patients the influence of advice from health professionals, personal experience, as well as social contacts and the media in shaping their perceptions and determining their use of NSAIDs, paracetamol and CMs for OA. In this regard, it would be useful to conduct similar research in settings in which patient centred care and shared decision-making are valued less than they are in Australia to see whether this corresponds to greater adherence to formal guidelines, i.e. greater usage of paracetamol over an NSAID.

A study of the attitudes and practices of clinicians would also be informative. Clinicians might also become reliant on an individual or specific class of medicine and, therefore prescribe by routine. It is well known that positive patient experiences with a specific medicine can reinforce prescribing practice (35,36). Exploring the reliance of prescribers on specific medicines and prescribing routines may enable identification of strategies to address this additional barrier to clinical practice guideline implementation. Importantly, there is a need to better appreciate the limitations imposed when medicines are used in the field where toxicity, and especially symptom-free toxicity, may be less relevant to the patient than immediacy of effect on the quality of daily living.

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