Patient and Physician Preferences for Pain Relief Treatment for Knee Osteoarthritis: Formative Qualitative Research for a Discrete Choice Experiment

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Background

- Knee osteoarthritis (KOA) is a leading global cause of disability and chronic pain.[1]
- KOA affects individuals differently[2] and there has been a shift towards adopting a more patient-centric approach to treatment.[3,4]
- **Understanding patient and healthcare practitioners (HCPs) preferences for KOA pain treatment remains critical for facilitating shared decision-making for the optimal intervention.**

Objective

This qualitative study sought to understand what aspects of pain relief treatment are most important to patients and HCPs. We sought to understand preferences around:

- The **benefits** of pain relief treatment
- The potential **risks** of pain relief treatment
- The **experience** of taking pain relief treatment

The findings will inform the design of a discrete choice experiment (DCE) to elicit patient preferences.

Methodology

We conducted semi-structured interviews with eight patients and four HCPs in each of the six countries. Patients were eligible if they regularly experienced **moderate-to-severe pain associated with KOA and had been prescribed pain relief treatment**. Interviews were conducted in the participants' native language. HCPs were **eligible if they treated >25 KOA patients per month**; medical specialities reflected clinical practice in each country. We used purposive sampling to recruit HCPs by country which was informed by market research to reflect standard practice in that region. Thematic analysis of interview transcripts, supported by NVivo software was guided by the objectives of the qualitative research and the specific priorities for the DCE design:

- Perceptions and experiences of intra-articular (IA) injections
- Ability to separate pain and function
- Differences in opinion by patient and HCP

Results

Sample characteristics

Patients

	18-39	40-59	60-74	75+
Age	4 (8.3%)	12 (25%)	27 (56.3%)	5 (10.4%)

	Male	Female
Sex	21 (43.8%)	27 (56.2%)

	Yes	No
Experience with IA injections	35 (72.9%)	13 (27.1%)

HCPs

	Rheumatologist	Orthopaedist	Other
France	2	2	0
Germany	2	1	1*
Spain	2	2	0
Italy	1	3	0
USA	1	2	1**
UK	2	2	0
Total	**10 (41.7%)**	**12 (50%)**	**2 (8.3%)**

	Public practice	Private practice	Both
France	4	0	0
Germany	3	1	0
Spain	3	1	0
Italy	2	0	2
Total	**20 (83.3%)**	**2 (8.3%)**	**2 (8.3%)**

*General surgeon (office-based);
**Interventional pain management specialist.
Note: we did not ask HCPs from the USA and UK for their setting

Overview

- A total of 72 interviews were conducted; 48 patient interviews and 24 HCP interviews.
- Pain relief, functional/mobility improvements, and the ability to go about daily activities were consistently the most important benefits and characteristics mentioned by **patients**.
- Delaying the need for or avoiding surgery altogether, duration of pain relief, and avoiding side effects were also often mentioned by **patients**
- **HCPs** were also more likely to emphasise delaying the need for surgery as a benefit.
- While **patients** are more concerned about relieving pain, **HCPs** place greater emphasis on improving function and mobility.

Benefits

- The most important benefits to **patients** were pain relief itself, improvement in function, and the ability to go about their usual activities.
- Many **patients** also felt that sufficient pain relief has positive effects on their mood and mental health.
- Duration, onset of pain relief and magnitude of effect were all considered important. Duration was considered the most important by many patients.
- Pain and function are considered to be related by **patients and HCPs**, and most interviewees suggested that it is not possible to separate the two.
- Delaying the need for knee replacement surgery or avoiding surgery altogether was considered a potential benefit of pain relief treatment by both **patients and HCPs.**

> *Well, when you're not in pain, your **mental health improves**. You're not always the most pleasant person to be around if you're in pain and I have four children and a husband so [laughter] I think it might be more of a benefit to them as it is to me that I'm more pleasant to be around, honestly.*
> **Female patient, 40-59, USA**

> ***The goal is to delay surgery** until we consider surgery will provide its benefits until the end of their lives, without the need to redo it.*
> **Orthopaedist, Spain**

Risks

- Most **patients** were aware of the risks of associated pain relief treatment.
- **HCPs** were more aware of risks associated with long-term use of pain relief treatment (e.g. paracetamol or ibuprofen) or interactions with other medications compared to patients.

> *Well, with the medications that I take, of course it is written there, that some side effects can occur, but – hopefully – I don't have them.*
> **Male patient, 40-59, Germany**

Experience

- Views on the preferred mode of administration were mixed, some **patients** felt that being able to take treatment themselves was important, while others did not think the mode of administration was important.
- Views on intra-articular injections were also mixed, but **patient**s were generally open to try injections if their pain was no longer managed sufficiently.
- **Patients** with previous experience of intra-articular injections were likely to have had a positive experience.
- Some fears mentioned were the pain of the initial injection, that the injection wouldn't be effective, and infections of the injection site.
- **HCPs** tended to agree that patients are often apprehensive about injections but that most are motivated to accept injections due to the potential for long-lasting pain relief.
- **HCPs** feel that injections are a valuable tool for managing pain in patients with comorbidities who are not candidates for knee replacement surgery
- **HCPs** reported that they would usually consider injections for those with severe pain, once other treatments are no longer providing sufficient pain relief.

> *Once you get the injection done, you might have a feeling of discomfort for about 24 hours at most, but then you go back to normal.*
> **Female patient, 18-39, Italy**

> *Normally it's just their fear of injections and their apprehension, and they've heard that this is terrible and they're not sure they want to go through with this terrible injection when in reality afterwards they realise it's […] a pretty easy injection to give and get.*
> **Orthopaedist, USA**

Implications for the DCE

The DCE will focus on intra-articular injections as a mode of administration for pain relief treatments. Important attributes to consider for selection as identified through qualitative interviews are:

Improvement in pain Improvement in function	Interviewees felt these are interconnected so inclusion as separate attributes requires careful consideration to ensure scenarios are plausible. Patients were comfortable using a numerical scale to describe these attributes
Duration of pain relief	Duration of pain relief was considered by patients to be important, this is particularly relevant for IA injections
Onset of pain relief	Onset of pain relief was considered by patients to be important, this is particularly relevant for IA injections
Delaying the need for surgery	Delaying the need for surgery was seen as a potential benefit by both patients and HCPs
Procedure-related pain	Aversion to needles and associated pain was mentioned by several patients

Although avoiding side effects is important to patients, specific concerns expressed were related to side effects associated with paracetamol, NSAIDs and opioids rather than intra-articular injections.

Conclusions

- **Patient and HCP preferences in this study are broadly aligned in terms of the benefits of pain relief treatments**. However, due to individual variation, individuals' preferences regarding the mode of administration and clinical profile need to be considered when making treatment decisions.
- **Improvement in pain and function were the two most important benefits for patients**, with most considering these interconnected factors.
- HCPs placed greater emphasis on improving function and mobility and appeared to be more aware of and concerned about long-term side effects than patients.
- **Delaying the need for knee replacement surgery was considered a potential benefit** of pain relief treatment by patients and HCPs

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