

Physicians' Stated Preferences Over Benefits and Risks Associated With NSAID Use in Patients With Osteoarthritis in UK

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ABSTRACT

Background: Treatments for symptom control in osteoarthritis (OA) confer varying degrees of benefits alongside medication-related risks. Physicians' preferences over benefits and risks of NSAIDs are an important aspect of understanding clinical practice.

Objectives: To estimate physicians' preferences over benefits and risks associated with NSAID use in the management of OA and examine differences in preferences between general practitioners (GPs) and specialists.

Methods: Participating physicians treated at least 10 OA patients per-month in UK. Each physician was randomized to receive one of four blocks of discrete-choice questions; each block consisting of 12 paired choice tasks comparing treatment profiles. Treatment profiles were defined by four benefits (ambulatory pain, resting pain, stiffness, difficulty doing daily activities) and four medication-related risks (bleeding ulcer, stroke, heart attack, hypertension), each varying across four clinically meaningful levels. Elicitation of preferences was facilitated using standardized patient profiles systematically varying by age, co-morbid conditions, and clinically relevant risks of NSAIDs. Preference weights were estimated using mixed-effects logistic regression, and were standardized on a 0-10 (low-high) importance scale.

Results: 477 physicians participated (61% GPs, 39% specialists). Reductions in ambulatory pain and difficulty doing daily activities were the most important efficacy variables (6.45; 95% CI: 4.8-8.2), followed by eliminating resting pain (3.18; 95% CI: 1.9-4.5) and stiffness (2.79; 95% CI: 1.5-4.1). Ambulatory pain was twice as important as resting pain or stiffness ($P < 0.05$). Risk of heart attack was the most important medication-related risk outcome (10.00; 95% CI: 7.6-12.4) followed by stroke (9.42; 95% CI: 7.2-11.6), ulcer risk (4.62; 95% CI: 3.5-5.7) and hypertension (3.25; 95% CI: 3.2-3.4). There were no statistically significant differences in preferences between GPs and specialists.

Conclusions: Ambulatory pain and the incremental risk of heart attack were the most important NSAID-related attributes that influence physicians' treatment choices. Preferences did not vary between GPs and specialists. The findings confirm that benefit-risk tradeoffs are important aspects in treatment selection for OA management.

BACKGROUND

- When making treatment choices for symptom control in osteoarthritis (OA), physicians must balance expected benefits against potential treatment-related risks.
- There are limited data related to physicians' preferences over benefits and risks of nonsteroidal anti-inflammatory drugs (NSAIDs) and how preferences vary between general practitioners (GP) and specialists.

OBJECTIVES

- To estimate physicians' preferences across medication-related benefits and risks associated with the use of NSAIDs in the management of OA.
- To test for differences in preferences between GPs and specialists.

METHODS

- Sample
 - Physicians were recruited from hospital directories, physician association lists, or through other commercial lists in the United Kingdom
- Inclusion Criteria
 - Practicing board-certified (or eligible) internist, general practitioner, orthopedist, or rheuma-tologist involved in treating OA patients
 - Treated at least 10 OA patients each month
- Physicians completed a standardized online questionnaire covering demographics, practice, and treatment preferences.
- Stated choice conjoint analysis was used to estimate physicians' preferences across medication-related benefits and risks associated with the use of NSAIDs in the management of OA.
 - Benefit attributes
 - Ambulatory pain
 - Resting pain
 - Stiffness
 - Difficulty doing daily activities
 - Risk attributes
 - Bleeding ulcer
 - Incremental chance of stroke
 - Incremental chance of experiencing a heart attack
 - Incremental chance of developing hypertension
- Benefit attributes were presented on a 0-100 scale.
- Risk attributes were expressed as probabilities over a fixed time period.
- Benefit and risk attributes varied across four clinically meaningful levels.
- Each physician was randomized to receive one of four blocks of discrete-choice questions; each block consisting of 12 paired choice tasks comparing treatment outcome profiles.

METHODS continued

Benefit and Risk Attributes

Medicine Feature	Abbreviated Label	Levels
Pain while moving around 1 hour after taking the medicine	Ambulatory pain	<ul style="list-style-type: none"> None Mild Moderate Severe
Pain while sitting, lying down, or sleeping 1 hour after taking the medicine	Resting pain	<ul style="list-style-type: none"> None Mild Moderate Severe
Stiffness 1 hour after taking the medicine	Stiffness	<ul style="list-style-type: none"> None Mild Moderate Severe
Difficulty doing daily activities 1 hour after taking the medicine	Difficulty doing daily activities	<ul style="list-style-type: none"> None Mild Moderate Severe
Chance of a bleeding ulcer requiring an operation within the next year because of the medicine	Risk of bleeding ulcer	<ul style="list-style-type: none"> None 10 out of 1,000 (1.0%) 50 out of 1,000 (5.0%) 100 out of 1,000 (10.0%)
Additional chance of a heart attack/stroke within the next 5 years because of the medicine	Heart-attack risk/ stroke risk	<ul style="list-style-type: none"> No chance 5 out of 1,000 (0.5%) 15 out of 1,000 (1.5%) 30 out of 1,000 (3.0%)

Risk Attribute - Hypertension

- Hypertension risk was not included in the choice questions.
- Physicians assessed hypertension risks in a follow-up subset of choice questions.

You selected **Medication A [B]** in the question above. If clinical trial data indicate that 10% of patients experience clinically significant increases in blood pressure (persistently elevated above 140/90 mmHg) within the first year with Medication A [B], would you still choose Medication A [B]?

- Yes, I would still choose Medication A [B]
- No, I would switch to Medication A [B]

Elicitation of Preferences

- The elicitation of physician treatment preferences was facilitated using standardized patient profiles.
 - Physicians were shown 3 patient profiles randomly selected from among 9 profiles.
 - Patient profiles varied systematically by age, concomitant conditions, and clinically relevant risks of NSAIDs.
- For a given profile, physicians responded to the question:
 - "Please look at the two hypothetical OA medications below. In your professional opinion, which medication is the better choice for this patient if these were the only OA medications available?"

Choice Questions

Medication Features	Medication A	Medication B
Pain while moving around one hour after taking the medication	None	None
Pain while sitting, lying down, or sleeping one hour after taking the medication	Mild	Mild
Stiffness one hour after taking the medication	Mild	Mild
Difficulty doing daily activities one hour after taking the medication	Mild	Mild
Risk of a bleeding ulcer requiring an operation within the next year because of the medication	10 people out of 1,000 (1.0%)	50 people out of 1,000 (5.0%)
Incremental, treatment-related risk of a stroke within the next 5 years	30 additional people out of 1,000 (3.0%) will have a stroke	15 additional people out of 1,000 (1.5%) will have a stroke
In your professional opinion, which OA medication is the better choice for this patient?	Medication A	Medication B

List of Patient Profiles

- Patient Profile 1:** A 55-year-old patient with severe osteoarthritis (eg, hip or knee). The patient's health is otherwise good (high performance status) with no history of kidney disease and no significant comorbidities.
- Patient Profile 2:** A 70-year-old patient with severe osteoarthritis (eg, hip or knee). The patient's health is otherwise good (high performance status) with no history of kidney disease and no significant comorbidities.
- Patient Profile 3:** A 55-year-old patient with severe osteoarthritis (eg, hip or knee) and a history of gastrointestinal bleeding. The patient's health is otherwise good (high performance status).
- Patient Profile 4:** A 70-year-old patient with severe osteoarthritis (eg, hip or knee). The patient has had a myocardial infarction within the past 12 months. The patient's health is otherwise good (high performance status).
- Patient Profile 5:** A 55-year-old patient with severe osteoarthritis (eg, hip or knee). The patient's blood pressure is persistently elevated above 140/90 mmHg and has not been adequately controlled. The patient's health is otherwise good (high performance status).
- Patient Profile 6:** A 55-year-old patient with severe osteoarthritis (eg, hip or knee). The patient has had a myocardial infarction within the past 12 months. The patient's blood pressure is persistently elevated above 140/90 mmHg and has not been adequately controlled. The patient's health is otherwise good (high performance status).

METHODS continued

- Patient Profile 7:** A 55-year-old patient with severe osteoarthritis (eg, hip or knee) and a history of gastrointestinal bleeding. The patient has had a myocardial infarction within the past 12 months. The patient's health is otherwise good (high performance status).
- Patient Profile 8:** A 70-year-old patient with severe osteoarthritis (eg, hip or knee) and a history of gastrointestinal bleeding. The patient's blood pressure is persistently elevated above 140/90 mmHg and has not been adequately controlled. The patient's health is otherwise good (high performance status).
- Patient Profile 9:** A 70-year-old patient with severe osteoarthritis (eg, hip or knee) and a history of gastrointestinal bleeding. The patient has had a myocardial infarction within the past 12 months. The patient's blood pressure is persistently elevated above 140/90 mmHg and has not been adequately controlled. The patient's health is otherwise good (high performance status).

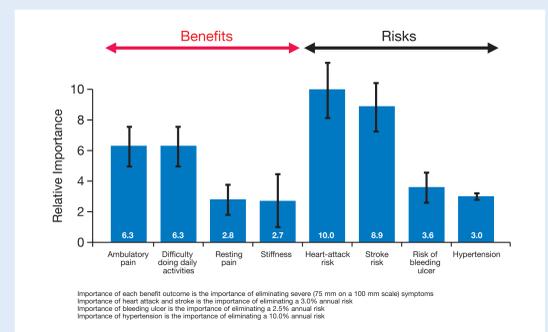
STATISTICAL METHODS

- The observed choice patterns were used to quantify preferences over treatment attributes and reveal the relative importance of attribute ranges/levels.
- Mixed-effects logistic regression models were used to estimate preference weights.
 - Preference weights were standardized in a 0-10 importance scale where lower values represent lower importance.
- Separate models were estimated for GPs and specialists (orthopaedists and rheumatologists) in order to test for differences in group preferences.

Descriptive Statistics

Demographics	Subjects N = 477
Mean physician age, years (SD)	43 (10.1)
Female	25%
Specialty	
Orthopedics	19%
Rheumatology	15%
General Practice	61%
Internist	5%
Years in practice	
Less than 10 years	33%
10 – 20 years	36%
More than 20 years	31%

Importance of Treatment Attributes



- Importance of Benefit attributes
 - Physicians ranked reductions in ambulatory pain and difficulty doing daily activities as the most important efficacy variables, followed by eliminating resting pain and stiffness.
 - Ambulatory pain was twice as important as resting pain or stiffness.
- Importance of Risk attributes
 - Physicians ranked the risk of heart attack as the most important medication-related risk outcome, followed by stroke, ulcer risk, and hypertension.
- Differences in preferences among physician groups
 - There were no statistically significant differences in treatment preferences between GPs and specialists (orthopaedists and rheumatologists).
 - Each resulting importance estimate was not statistically significantly different between the two groups.

CONCLUSIONS

- Evaluation of physician preferences revealed that reduction in ambulatory pain/difficulty doing daily activities and the incremental risk of heart attack are the most important NSAID-related attributes that influence treatment choices.
- These preferences did not vary between GPs and specialists.
- The findings confirm that benefit-risk tradeoffs are important aspects in treatment selection for OA management.