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The Patient Journey in Knee OA: Variations in Patient Characteristics and Treatment by Physician Specialty

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Background: Knee osteoarthritis (OA) affects 32.5 million US adults and is typically treated by primary care physicians, rheumatologists (RH), orthopedists (OS), sports medicine (SM) physicians, and pain specialists (PS). Treatment is multimodal and comprises conservative and pharmacological therapies, intra-articular injections, and surgery. Guidelines provide recommendations in idealized settings, but little documentation exists in real-world settings; hence, we aimed to assess patient characteristics and treatment patterns across 4 specialties.

Methods: This project was exempt from IRB review and HIPAA consent. Physicians with >2 years of practice and >10 knee OA patients per week were interviewed about their 2 most recent knee OA patients. Interviews (structured questions and answers) assessed demographics, referrals, comorbidities, time to treatment, and lines of treatment. As this study was designed to assess effect modifications, a confidence level of 90% was used.

Results: Patient demographics are shown in Table 1. Participating physicians included 125 RH, 176 OS, 76 SM, and 50 PS. Overall, 854 patients were included in the chart review. Patients were mean age 65 years, mean BMI 30.7, and 51% were female. First-line treatments are shown in Figure 1. Mean time between symptom onset and diagnosis was 3.4 years. Over 90% of patients used over-the-counter (OTC) nonsteroidal anti-inflammatory drugs (NSAIDs) and acetaminophen (APAP), with lowest use in RH patients. IA corticosteroids (CS) were used in ~20% of patients and hyaluronic acid (HA) in ~10% of patients, with similar use across specialties. Reasons for therapy discontinuation (DC) included lack of efficacy, AE/safety, and formulary/cost (Table 2). DC for lack of efficacy was 61% for single-injection HA. AE/safety concerns were reasons for DC of prescription (Rx) NSAIDs and opioids. Second-line treatments included CS>OTC/Rx NSAIDs/APAP>HA. Third-line treatments were HA>CS>OTC/Rx NSAIDs/APAP. Mean BMI was significantly higher in SM (33) and PS (32) patients compared with OS (30) and RH (30) patients. There were significantly more female RH patients (56%) than OS patients (47%). PS patients had significantly higher current unemployment (73%) due to an inability to perform function (15%) than patients treated by other specialties. RH, SM, and PS patients had significantly more comorbidities than OS patients. Overall, mean pain (NRS 0–10) was 5.6 and KL grade was 3. PS patients had significantly higher pain scores (6.5) than patients treated by other specialties. Limitations included selection bias, confounding, small sample size, and missing data.

Conclusion: PS see more patients with pain syndromes and higher BMIs. RH see more patients with rheumatoid conditions. OS patients used significantly more OTC NSAIDs/APAP than RH patients and were less likely than SM and PS patients to use Rx NSAIDs. Lack of efficacy drove most therapy changes. Of HA patients, 61% discontinued due to lack of efficacy. These data suggested that treatment patterns for knee OA were similar across physician types, and new therapies can provide additional options to currently available treatments that may have efficacy or safety concerns.

Images, Tables, and Graphics

Table 1: Demographics

	Total N=854	Orthopedist (OS) n=352	Rheumatologist (RH) n=250	Sports Medicine (SM) n=152	Pain Specialist (PS) n=100
Mean age	65.15	65.46 ^C	65.36 ^C	63.34	66.33 ^C
65 years of age or older (total)	476	198	145	71	62
	56%	56% ^C	58% ^C	47%	62% ^C
Mean age when symptoms started	55.13	56.78 ^{BCD}	54.75	53.48	52.59
Male	419	185	106	77	51
	49%	53% ^B	42%	51%	51%
Female	435	167	144	75	49
	51%	47%	58% ^A	49%	49%
Mean BMI	30.74	30.19	29.80	32.96 ^{AB}	31.64 ^{AB}
BMI ≥35	22%	18%	17%	32% ^{AB}	34% ^{AB}
Not currently employed (total) due to inability to perform function	59%	57%	67%	52%	73% ^{ABC}
	7%	5%	7%	5%	15% ^{ABC}
Bilateral OA (total)	428	146	96	77	49
	50%	41%	62% ^{ACD}	49%	51%

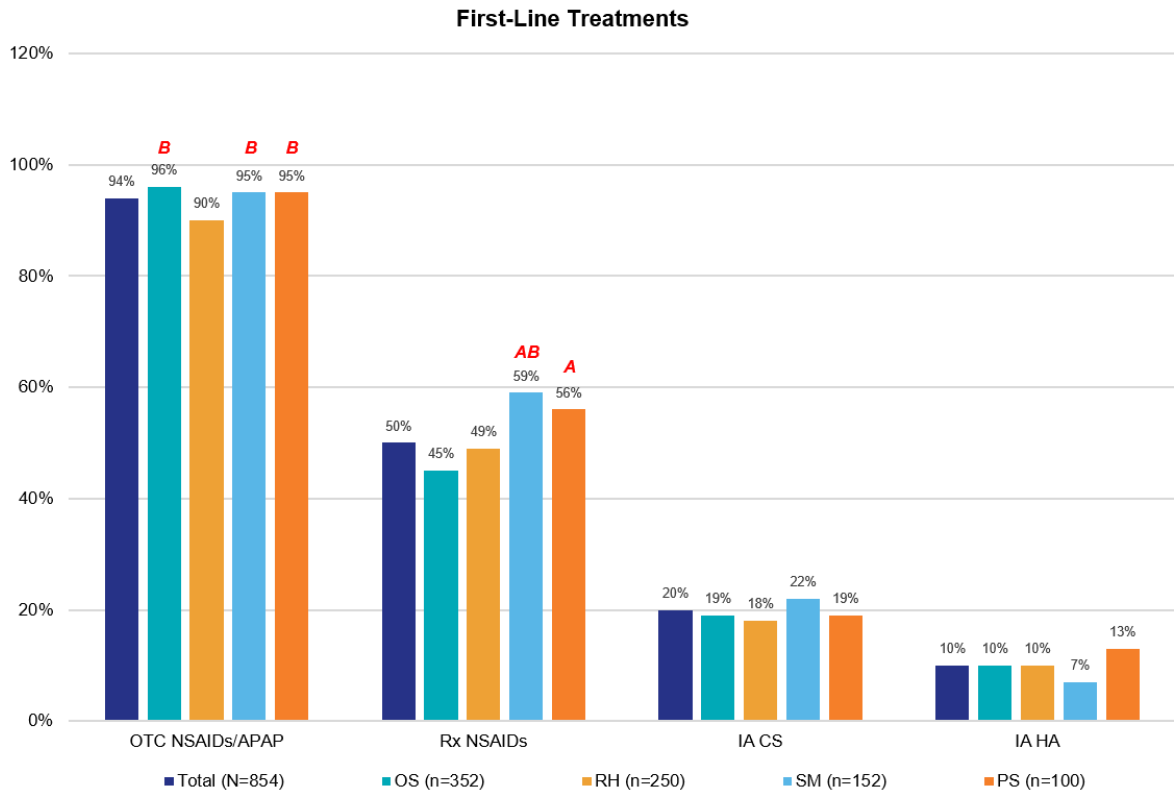
Key: Statistical significance, $P < 0.1$; A: versus orthopedist, B: versus rheumatologist, C: versus sports medicine physician, D: versus pain specialist

Table 2: Reasons for discontinuation

Therapy (are using or have used); n (%)	Duration (mean)	DC'd % (n)	Top reasons for discontinuation†
OTC NSAIDs, patches, or creams; n=660 (73%)	4.4 years	27% (177)	48% (n=85) lack of efficacy 19% (n=33) unknown 37% (n=66) worsening of symptoms 15% (n=26) residual symptoms
Acetaminophen; n=606 (71%)	4.8 years	28.5% (173)	57% (n=98) lack of efficacy 20% (n=35) unknown 25% (n=44) worsening of symptoms 13% (n=23) residual symptoms
Prescription NSAIDs (oral or topical); n=561 (66%)	3.7 years	31.5% (177)	38% (n=67) lack of efficacy 14% (n=24) unknown 27% (n=47) safety concerns 19% (n=33) side effects
Celecoxib; n=261 (31%)	2.6 years	49.4% (129)	41% (n=53) lack of efficacy 13% (n=17) unknown 21% (n=27) safety concerns 18% (n=23) cost
Opioid; n=173 (20%)	3.2 years	32% (55)	51% (n=28) safety concerns 18% (n=10) unknown 36% (n=20) side effects 16% (n=9) lack of efficacy
Prescription antidepressant; n=89 (10%)	3.0 years	25% (22)	36% (n=8) lack of efficacy 36% (n=8) unknown 18% (n=4) side effects
Injectables			
	Duration (mean)		
Intra-articular corticosteroid; n=512 (60%)	1.4 years	82.4% (422)	17% (n=73) lack of efficacy 48% (n=201) unknown 14% (n=59) cost of medication 12% (n=50) worsening of symptoms
Single-injection hyaluronic acid; n=187 (22%)	2.0 years	52.4% (98)	61% (n=60) lack of efficacy 10% (n=10) unknown 22% (n=22) worsening of symptoms 12% (n=12) residual symptoms 9% (n=9) cost

†Reasons for discontinuation are not mutually exclusive.

Figure 1: First-line treatments



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