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

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Background

- Knee osteoarthritis (OA) affects an estimated 32.5 million US adults.[1]
- Knee OA is diagnosed and treated by multiple specialties and comprises conservative and pharmacological treatments, intra-articular (IA) injections, and surgery.
- Guidelines provide recommendations in idealized settings, but little documentation exists in real-world settings.
- This retrospective observational chart review aimed to assess patient characteristics and treatment patterns across 4 specialties: orthopedists (OS), rheumatologists (RH), sports medicine (SM) physicians, and pain specialists (PS).

Methods

- 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) conducted between March and April 2019 assessed demographics, referrals, comorbidities, time to treatment, and lines of treatment (Table 1 and Figure 1).
- Multiple responses were allowed for first-line treatments (over-the-counter nonsteroidal anti-inflammatory drugs/acetaminophen [OTC NSAIDs/APAP], prescription NSAIDs, IA corticosteroids, and IA hyaluronic acid) and reasons for discontinuation, which resulted in totals >100% (Figure 1 and Table 2).
- As this study was designed to assess effect modifications, a confidence level of 90% was used.
- This project was exempt from IRB review and HIPAA consent as no patient-identifying information was included.
- Limitations included potential selection bias, confounding by risk factors, inability to show causation, small sample size, and missing data.

Discussion and Conclusions

- **Patients treated by orthopedists used significantly more OTC NSAIDs/APAP than patients treated by rheumatologists.**
- **Pain specialists saw more patients with pain syndromes/higher BMIs. Rheumatologists saw more patients with rheumatoid conditions.**
- **With the exception for opioids (safety), the primary reason for treatment discontinuation was lack of efficacy.**
- **Safety concerns were the second-line reason for treatment discontinuation for prescription NSAIDs and COX-2 inhibitors.**
- **Although differences in patient characteristics and comorbidities existed, treatment strategies were similar across specialties. Newer treatments may provide additional options for existing treatments that have efficacy or safety concerns.**

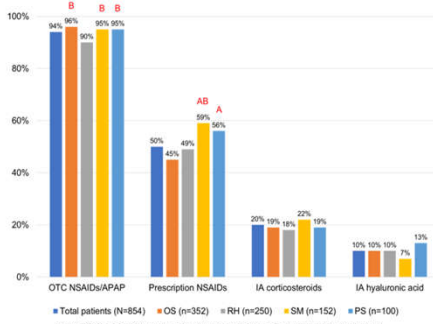
Results

Table 1. Demographic and Clinical Characteristics Stratified by Diagnosing Physician

	Total Patients N=854	Ortho Surgeons (OS) n=352	Rheumatologists (RH) n=250	Sports Medicine (SM) n=152	Pain Specialists (PS) n=100
Mean age (years)	65.2	65.5[C]	65.4[C]	63.3	66.3[C]
65 years of age or older (total)	56% (n=476)	56% (n=198)[C]	58% (n=145)[C]	47% (n=71)	62% (n=62)[C]
Male	49% (n=419)	53% (n=185)[B]	42% (n=106)	51% (n=77)	51% (n=51)
Female	51% (n=435)	47% (n=167)	58% (n=144)[A]	49% (n=75)	49% (n=49)
Mean BMI	30.7	30.2	29.8	33.0[AB]	31.6[AB]
BMI ≥35	22% (n=189)	17% (n=61)	18% (n=45)	32% (n=49)[AB]	34% (n=34)[AB]
Not currently employed (total)	59% (n=503)	57% (n=201)	60% (n=150)	52% (n=79)	73% (n=73)[ABC]
- Due to functional dysfunction	7% (n=30)	5% (n=8)	7% (n=10)	5% (n=3)	15% (n=9)[ABC]
Mean pain (0–10 NRS)	5.6	5.5	5.5	5.5	6.5[ABC]
Bilateral OA (total)	50% (n=428)	41% (n=146)	62% (n=96)[ACD]	49% (n=77)	51% (n=49)
Comorbidities					
Average # of comorbidities	2.6	2.3	2.6[A]	2.8[A]	3.2[AB]
Hypertension	57% (n=485)	59% (n=206)	57% (n=142)	57% (n=87)	50% (n=50)
Obesity	38% (n=326)	33% (n=117)	40% (n=99)[A]	46% (n=70)	40% (n=40)
Hyperlipidemia	33% (n=279)	28% (n=98)	36% (n=89)[A]	41% (n=63)[AD]	29% (n=29)
Type 2 diabetes	25% (n=210)	22% (n=76)	22% (n=54)	33% (n=50)[AB]	30% (n=30)[A]
Chronic back pain	21% (n=182)	17% (n=60)	19% (n=48)	24% (n=36)[A]	38% (n=38)[ABC]
Anxiety/depression	19% (n=160)	17% (n=59)	16% (n=41)	21% (n=32)	28% (n=28)[AB]
CVD	18% (n=155)	18% (n=64)	15% (n=38)	17% (n=26)	27% (n=27)[ABC]

Key: Statistical significance, $P<0.1$; A: versus orthopedic surgeons, B: versus rheumatologists, C: versus sports medicine physicians, D: versus pain specialists

Figure 1. First-Line Treatments



Key: Statistical significance, $P<0.1$; A: versus orthopedists, B: versus rheumatologists

Table 2. Reasons for Discontinuation

Treatment (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 37% (n=66) worsening of symptoms 15% (n=26) residual symptoms 19% (n=33) unknown
Acetaminophen; n=606 (71%)	4.8 years	28.5% (173)	57% (n=98) lack of efficacy 25% (n=44) worsening of symptoms 13% (n=23) residual symptoms 20% (n=35) unknown
Prescription NSAIDs (oral or topical); n=561 (66%)	3.7 years	31.5% (177)	30% (n=57) lack of efficacy 27% (n=47) safety concerns 19% (n=33) side effects 14% (n=24) unknown
COX-2 inhibitors; n=261 (31%)	2.6 years	49.4% (129)	41% (n=53) lack of efficacy 21% (n=27) safety concerns 18% (n=23) cost 13% (n=17) unknown
Opioids; n=173 (20%)	3.2 years	32% (55)	51% (n=28) safety concerns 36% (n=20) side effects 16% (n=9) lack of efficacy 18% (n=10) unknown
Prescription antidepressants; n=89 (10%)	3.0 years	25% (22)	36% (n=8) lack of efficacy 18% (n=4) side effects 36% (n=8) unknown
Injectables			
IA corticosteroids; n=512 (60%)	1.4 years	82.4% (422)	17% (n=73) lack of efficacy 14% (n=59) cost of medication 12% (n=50) worsening of symptoms 48% (n=201) unknown
IA hyaluronic acid; n=187 (22%)	2.0 years	52.4% (98)	61% (n=60) lack of efficacy 22% (n=22) worsening of symptoms 12% (n=12) residual symptoms 9% (n=9) cost 10% (n=10) unknown

[†]Reasons for discontinuation are not mutually exclusive.

References: 1) United States Bone and Joint Initiative: The Burden of Musculoskeletal Diseases in the United States (BMUS), Fourth Edition. Rosemont, IL.

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