Poster # - SA9

A Comparison of All-Cause And Knee Osteoarthritis (KOA)-Related Costs Of Newly-Diagnosed KOA Patients Treated With Multi-Injection IA-HAs: A Retrospective Database Analysis

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FERRING PHARMACEUTICALS

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INTRODUCTION

- Knee osteoarthritis (KOA) is one of the most prevalent degenerative joint diseases with an estimated 654.1 million individuals over 40 years of age suffering from this condition in 2020 [1].
- Among patients with severe symptoms, most studies recommended intra-articular corticosteroid (IA-CS) and intra-articular hyaluronic acid (IA-HAs) when other non-operative options are ineffective [2].
- Commonly used IA-HAs include Hyalgan® (Fidia); Supartz FX™ (Bioventus); Orthovisc® (Anika); Euflexxa® (Ferring) among others [3], and are characterized by different formulations and HA source, molecular weight, molecular structure, concentration, as well as different number of injections during one complete course [4].
- While Euflexxa has shown benefits such as reduced total knee arthroplasty (TKA) rates as compared to other HAs [5], its economic outcomes compared to different HA products using real-world data has not been previously assessed.

OBJECTIVE

- To compare all-cause and KOA-related costs associated with procedures and visits of newly-diagnosed KOA patients treated with multi-injection IA-HAs in real-world practice.

STUDY DESIGN AND PARTICIPANTS

- A five year retrospective analysis of Merative MarketScan Research Database (January 1st, 2015 to December 31st, 2019) was conducted to identify newly-diagnosed KOA patients.
- The focus population for this retrospective analysis was patients 18 years of age and older, with more than one medical claim of multi-injection Euflexxa (1% sodium hyaluronate), Orthovisc (hyaluronan), Hyalgan (sodium hyaluronate) and Supartz FX (sodium hyaluronate) after a 12-month wash-out period.
- Continuous enrollment for at least 12 months after the first IA-HA claim was required for this analysis (Table 1).
- Total per patient per year (PPPY) all-cause costs and KOA-related total costs of the Euflexxa treated patient group within the 12-month follow-up were compared to that of the Orthovisc and Hyalgan/Supartz FX groups.
- Costs analyzed include inpatient, ER, office, outpatient and others (Table 2 through Table 5).
- A doubly robust method with generalized linear models (GLMs) and IPTW (inverse probability treatment weighting) was used.
- Covariates included age, gender, comorbidities, medication and intervention usage, treatment completion rate and number of injections in the initial IA-HA course.

Table 1. Eligible patient populations included in Merative MarketScan Research Database retrospective analysis

Total Eligible Population	Euflexxa	Orthovisc	Hyalgan/ Supartz FX
Patient with ≥ 12 months of eligible follow-up period after the index date	11,207	10,235	8,483

CONCLUSION

Patients treated with Euflexxa (1% sodium hyaluronate) are associated with statistically significant lower KOA-related and all-cause costs compared to that of Orthovisc (hyaluronan) or Hyalgan/Supartz FX (sodium hyaluronate).

RESULTS (Statistically significant if $p < 0.05$)

Table 2. Adjusted KOA related costs of eligible patients treated with Euflexxa vs Orthovisc

KOA-Related Cost ($)	Euflexxa Adjusted Values	Orthovisc Adjusted Values	Difference in Adjusted Values (%)	P-value
Inpatient	2632.5	2699.2	2.47%	p < 0.001
ER	2.0	1.6	-27.80%	p < 0.001
Office	174.6	191.2	8.68%	p < 0.001
Outpatient	767.0	759.1	-1.04%	0.167
Other	1467.3	1733.4	15.35%	p < 0.001
Total Medical	5397.9	5603.6	3.67%	p < 0.001
Pharmacy	89.2	103.6	13.89%	p < 0.001
Pharmacy - Opioids	13.3	14.0	5.17%	p < 0.001
Pharmacy - Non-Opioids Pain Meds	66.6	82.7	19.45%	p < 0.001
Total (Medical+Pharmacy)	5485.9	5712.9	3.97%	p < 0.001

(Euflexxa vs Orthovisc)

- The Euflexxa group had a 4.0% ($p < 0.001$) lower mean KOA-related total (medical + pharmacy) costs compared to the Orthovisc group

Table 3. Adjusted all-cause related costs of eligible patients treated with Euflexxa vs Orthovisc

All-Cause Cost ($)	Euflexxa Adjusted Values	Orthovisc Adjusted Values	Difference in Adjusted Values (%)	P-value
Inpatient	5361.5	5933.3	9.64%	p < 0.001
ER	741.8	815.8	9.08%	p < 0.001
Office	1043.5	1097.8	4.95%	p < 0.001
Outpatient	5406.9	5628.1	3.93%	p < 0.001
Other	3946.8	4426.7	10.84%	p < 0.001
Total Medical	16320.3	17515.9	6.83%	p < 0.001
Pharmacy	2935.4	3132.4	6.29%	p < 0.001
Total (Medical+Pharmacy)	19257.6	20646.7	6.73%	p < 0.001

(Euflexxa vs Orthovisc)

- The Euflexxa group had a 6.7% ($p < 0.001$) lower mean all-cause total (medical + pharmacy) costs compared to the Orthovisc group

Table 4. Adjusted KOA related costs of eligible patients treated with Euflexxa vs Hyalgan/Supartz

KOA-Related Cost ($)	Euflexxa Adjusted Values	Hyalgan/Supartz Adjusted Values	Difference in Adjusted Values in %	P-value
Inpatient	2181.0	2955.9	26.21%	p < 0.001
ER	1.8	3.1	41.73%	p < 0.001
Office	172.4	194.7	11.46%	p < 0.001
Outpatient	752.1	685.6	-9.70%	p < 0.001
Other	1384.5	1875.0	26.16%	p < 0.001
Total Medical	5209.5	5474.9	4.85%	p < 0.001
Pharmacy	87.2	107.1	18.59%	p < 0.001
Pharmacy - Opioids	13.5	20.5	33.97%	p < 0.001
Pharmacy - Non-Opioids Pain Meds	63.1	75.8	16.78%	p < 0.001
Total (Medical+Pharmacy)	5295.8	5577.1	5.04%	p < 0.001

(Euflexxa vs Hyalgan/Supartz)

- The Euflexxa group had a 5.0% ($p < 0.001$) lower mean KOA-related total (medical + pharmacy) costs compared to that of the Hyalgan/Supartz FX group

Table 5. Adjusted all-cause related costs of eligible patients treated with Euflexxa vs Hyalgan/Supartz

All-Cause Cost ($)	Euflexxa Adjusted Values	Hyalgan/Supartz Adjusted Values	Difference in Adjusted Values (%)	P-value
Inpatient	5052.3	5715.6	11.61%	p < 0.001
ER	755.2	752.0	-0.42%	0.502
Office	1046.4	1025.9	-2.00%	p < 0.001
Outpatient	5407.7	4878.3	-10.85%	p < 0.001
Other	3874.2	4732.3	18.13%	p < 0.001
Total Medical	16326.4	16456.8	0.79%	0.013
Pharmacy	2980.6	3043.9	2.08%	p < 0.001
Total (Medical+Pharmacy)	19291.5	19472.5	0.93%	0.002

(Euflexxa vs Hyalgan/Supartz)

- The Euflexxa group had a 0.9% ($p = 0.0016$) lower mean all-cause cost total (medical + pharmacy) costs compared to that of the Hyalgan/Supartz FX group

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