Efficacy and Safety of Intra-Articular Disease-Modifying Osteoarthritic drugs (DMOADs) for Knee Osteoarthritis: A Bayesian Network Meta-Analysis of Randomised Controlled trials

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Knee osteoarthritis (KOA) is a degenerative joint disease, and patients typically would require knee replacement.

There are no currently approved disease-modifying treatment options.

What if surgical intervention was not an option?

Disease modifying osteoarthritic drugs aim to bridge the gap.

DMOADs adjust:
1) Cartilage degradation
2) Subchondral bone remodeling
3) Synovial inflammation.

We aim to assess the efficacy and safety of intra-articular DMOADs in patients with KOA of Kellgren-Lawrence (KL) grades 2 and 3

Methods

Systemic search in 5 major databases

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Inclusion criteria

Patients aged ≥18 years with radiographically confirmed KL grade 2–3 KOA.
Intra-articular administration.
Treatment duration of ≥12 months for radiographic outcomes (or ≥6 months for MRI outcomes)

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Primary outcome:
- Structural efficacy (medial JSW, cartilage volume, cartilage thickness)

Secondary outcome:
- Pain
- Function
- Safety

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DMOAD agents included

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6 RCTs
Sprifermin (FGF-18) [1,2]
Lorecivivint [3,4]
SB-061 [5]
LNA043 [6]

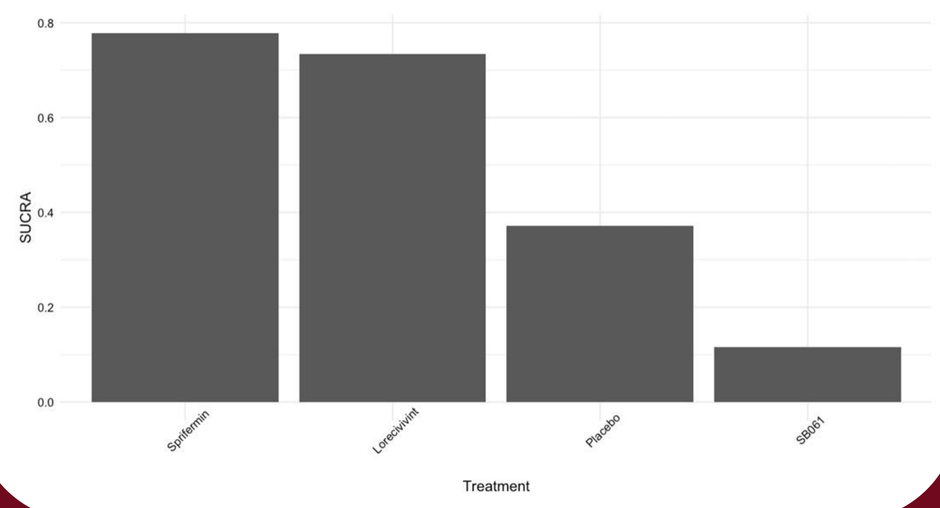
Results

1. Sprifermin and LNA043 show potential for structural modification in knee osteoarthritis (KOA).
2. Sprifermin also provides modest symptomatic improvement.
3. SB061 ranked best for tolerability with lowest adverse effects.

Surface Under the Cumulative Ranking (SUCRA)

Overall measure of treatment's performance. Values closer to 1 shows a higher probability that the treatment is the most favorable.

Figure 4. NMA SUCRA of DMOADs (medial JSW)



Conclusion

No DMOAD demonstrated consistent, clinically meaningful effects across structural, symptomatic, and safety outcomes.

This study highlights the need for larger, well-designed trials integrating structural, symptomatic, and safety endpoints.

References and PDF of poster