

Long-Term Economic and Clinical Value of Minimally Invasive SIJ Fusion for Refractory Sacroiliac Joint Pain

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Introduction

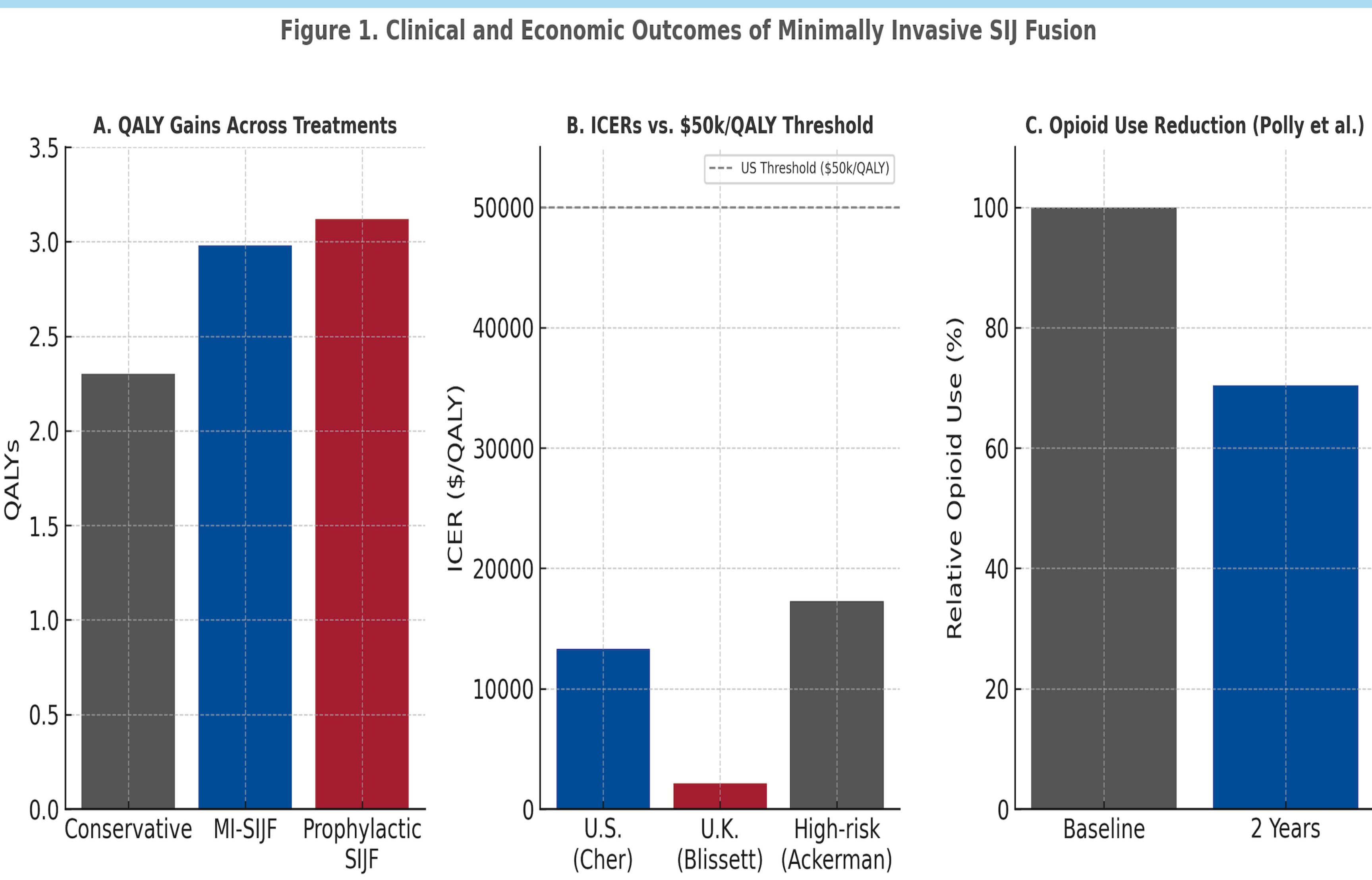
Chronic sacroiliac joint (SIJ) dysfunction contributes to up to 30% of axial low back pain cases, and standard conservative therapies often yield only temporary relief. Given the shift toward value-based healthcare, durable interventions that improve quality of life while reducing opioid reliance and healthcare utilization are increasingly important. Minimally invasive SIJ fusion (MI-SIJF), utilizing triangular titanium implants, has emerged as an effective, evidence-based solution for patients with refractory SIJ pain.¹⁻⁴

Methods

Focused literature review was performed to evaluate the clinical and economic outcomes of minimally invasive sacroiliac joint fusion (MI-SIJF). Published studies from 2015–2022 were identified in PubMed and key spine journals. Data from major cost-utility and randomized trials were summarized, including QALY gains, ICERs, pain relief, and opioid reduction. Findings from Cher, Ackerman, Blissett, and Polly were compared across U.S. and U.K. healthcare systems to assess consistency and long-term value.

Conclusions

Minimally invasive SIJ fusion offers a clinically effective, economically sustainable alternative for refractory SIJ pain. Supported by randomized trials and health economic studies, MI-SIJF consistently demonstrates improved patient outcomes and cost benefits. Early intervention in high-risk populations may further reduce complications and overall expenditures. Further real-world and policy-aligned research will help optimize patient selection and accessibility.¹⁻⁵



Data adapted from Cher DJ et al., 2016; Blissett DB et al., 2020; Ackerman SJ et al., 2022; Polly DW et al., 2015.

Results

Cost-utility analyses from the U.S. and U.K. demonstrate MI-SIJF’s long-term value versus non-surgical management. Cher et al. reported a five-year quality-adjusted life year (QALY) gain of 0.74 and an incremental cost-effectiveness ratio (ICER) of \$13,313/QALY, well below the U.S. willingness-to-pay threshold.¹ In the U.K., Blissett et al. showed MI-SIJF produced 2.98 QALYs vs. 2.30 for conservative care, with an ICER of £2,164/QALY; significantly lower than typical NHS policy thresholds.³ For high-risk patients needing multi-level lumbar fusion, Ackerman et al. found prophylactic SIJF reduced postoperative SIJ pain from 30% to 10%, with a QALY gain of 0.14 and ICER of \$17,293.² Randomized trials by Polly et al. confirmed substantial, sustained improvements in pain relief, function, and opioid reduction, with a 29.6% decline in opioid use at two years for MI-SIJF patients.⁴ All findings remained robust in sensitivity analyses and across different health systems.

References

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