Anterior Lumbar Interbody Fusion Versus Posterior Lumbar Interbody Fusion and Subsequent Lumbar Interventional Pain Procedures: A Propensity Score – Matched TriNetX Cohort Study



PRESENTER:
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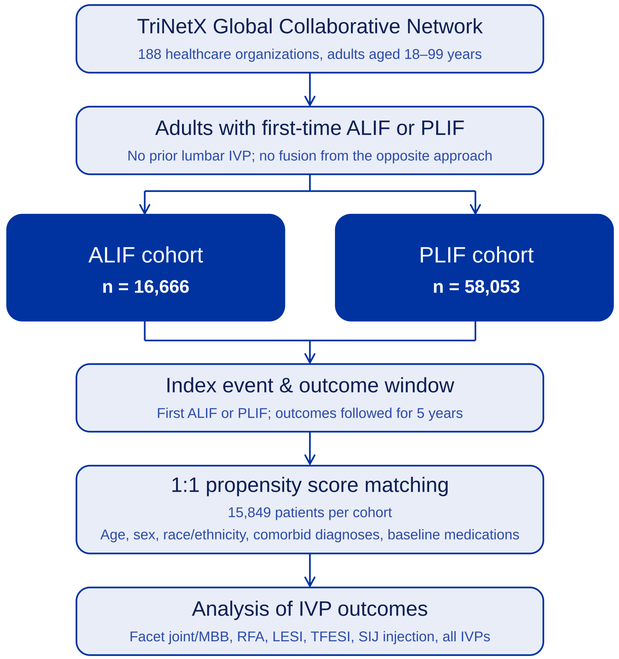
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BACKGROUND:

Persistent or recurring lumbar pain after spinal fusion may need interventional pain (IVP) procedures. However, it is uncertain if the use of IVP differs between anterior lumbar interbody fusion (ALIF) and posterior lumbar interbody fusion (PLIF). This study examined the incidence of lumbar IVP procedures following ALIF versus PLIF in patients who had not previously undergone IVP.

METHODS



ALIF was associated with a 12% lower risk of subsequent lumbar interventional pain procedures than PLIF over 5 years.

All lumbar IVP procedures

0.88

RISK RATIO

95% CI, 0.81–0.95

ALIF 6.93% vs PLIF 7.89%

HAZARD RATIO

0.95 (95% CI, 0.88–1.03)*

Lumbar interlaminar epidural steroid injection

0.91

RISK RATIO

95% CI, 0.79–1.05

ALIF 2.23% vs PLIF 2.46%

HAZARD RATIO

0.99 (95% CI, 0.85–1.14)

Sacroiliac joint injection

0.90

RISK RATIO

95% CI, 0.79–1.03

ALIF 2.57% vs PLIF 2.86%

HAZARD RATIO

0.97 (95% CI, 0.85–1.11)

Radiofrequency ablation

0.87

RISK RATIO

95% CI, 0.66–1.15

ALIF 0.60% vs PLIF 0.69%

HAZARD RATIO

0.95 (95% CI, 0.72–1.25)

Facet joint / medial branch blocks

0.82

RISK RATIO

95% CI, 0.69–0.97

ALIF 1.44% vs PLIF 1.76%

HAZARD RATIO

0.89 (95% CI, 0.74–1.06)

Transforaminal epidural steroid injection

0.84

RISK RATIO

95% CI, 0.74–0.94

ALIF 3.02% vs PLIF 3.61%

HAZARD RATIO

0.91 (95% CI, 0.80–1.03)



College of Medicine
Physical Medicine and Rehabilitation

RECORDED IVP OCCURRENCE

15,849 matched patients per cohort

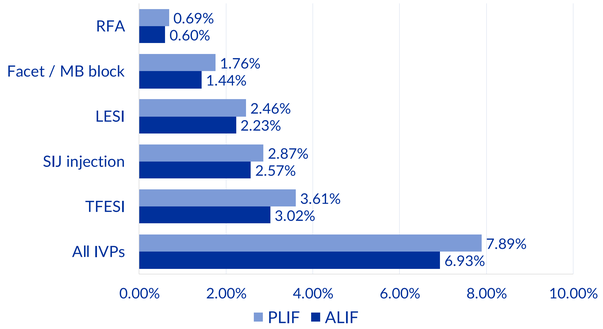


Figure 1. Patients with ≥1 recorded outcome. Composite counts unique patients across the selected categories. Outcomes overlap.

DISCUSSION

ALIF was associated with modestly lower use of interventional pain procedures than PLIF, driven mainly by transforaminal injections and facet/medial branch blocks.

The lower recorded occurrence of IVPs after ALIF may reflect differences in postoperative pain or treatment patterns. However, unmeasured factors, including surgical complexity, spinal alignment, baseline pain severity, and provider preferences, leave substantial potential for residual confounding and limit explanations of the observed association.

Further research incorporating surgical details, patient-reported pain and functional outcomes, and standardized follow-up is needed to clarify whether these associations reflect differences attributable to surgical approach.

CONCLUSION

ALIF was associated with fewer recorded lumbar IVPs. This observational data does not establish superiority for pain relief or justify selecting a surgical approach on this outcome alone.