

Transforaminal Epidural Injection Use Among Patients with Alcohol Use Disorder: A Multi Condition Analysis

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Introduction

- Chronic alcohol consumption is known to widely increase inflammation throughout the body, giving rise to increased pain hypersensitivity, particularly in patients who have pre-existing conditions such as spinal disorders.
- Repeat corticosteroid injections can be performed through a procedure known as transforaminal lumbar epidural steroid injection (TFESI) to manage the acute and chronic pain of various spinal conditions.
- This study aims to compare the frequency of TFESI procedures in alcohol-dependent spinal condition patients to their non-alcohol-dependent counterparts.

Methods

- Data Source: TriNetX national database of de-identified electronic medical records from multiple healthcare organizations (20-year span).
- Cohorts: Patients with lumbar spinal conditions divided into those with (ICD-10: F10) and without alcohol-related disorders; matched for age, sex, ethnicity, BMI, diabetes, nicotine, and opioid use.
- Analysis: Compared major outcomes using measure-of-association analysis (p-values, risk ratios, 95% CI); IRB exemption per UTMB policy.

Results

- Among 42,148 matched patients with lumbar fractures, those with alcohol use disorder (AUD) (n = 500) exhibited a significantly lower likelihood of receiving TFESI compared to non-AUD patients (RR = 0.82, 95% CI = 0.73–0.92, p < 0.001).
- Similarly, among 2,676 patients with ankylosing spondylitis, AUD patients (n = 21) had a lower likelihood of TFESI use (RR = 0.55, 95% CI = 0.33–0.94, p = 0.026).
- In contrast, among 97,837 patients with lumbar radiculopathy, AUD patients (n = 10,882) were more likely to receive TFESI (RR = 1.08, 95% CI = 1.05–1.11, p < 0.0001).
- In 95,851 patients with degenerative disc disease (DDD), the overall likelihood of TFESI did not differ significantly between groups (RR = 1.01, p = 0.71), but AUD patients received significantly fewer injections on average (p = 0.0325).
- This study expands on a previous TriNetX study which found that alcohol-related disorders are associated with increased utilization of TFESI in patients with spondylolisthesis (RR = 1.28, 95% CI = 1.15-1.43, p < 0.0001).

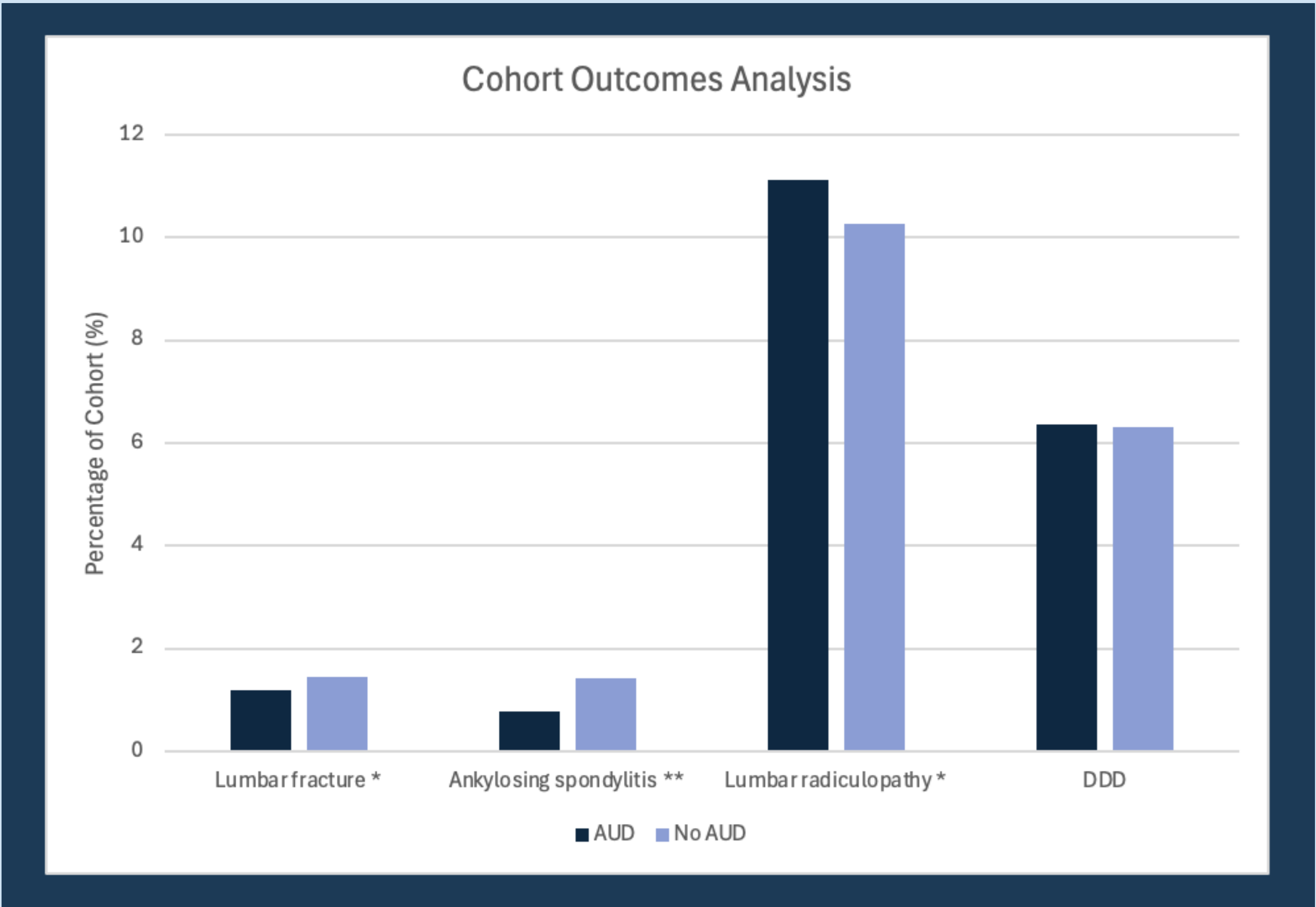


Figure 1: Outcome analysis after matching between AUD patients with TFESI use and non-AUD patients with TFESI use. * indicates p < 0.001 and ** indicates p < 0.05.

Discussion

- This updated study highlights significant variability in TFESI use among patients with AUD across different spinal conditions. AUD was associated with lower rates of TFESI in lumbar fracture and ankylosing spondylitis.
- These findings may reflect differential clinical presentation, provider decision-making, or disparities in healthcare access for patients with AUD.
- In contrast, AUD patients with lumbar radiculopathy are more likely to receive TFESI, suggesting a heightened pain response or differing treatment protocols in this group.
- As providers, these results can influence both pain management and resource allocation in this patient population, emphasizing the need for improved, equitable care to ensure access to appropriate treatment for AUD patients.

References

Egli, M., Koob, G. F., & Edwards, S. (2012). Alcohol dependence as a chronic pain disorder. *Neuroscience & Biobehavioral Reviews*, 36(10), 2179–2192. <https://doi.org/10.1016/j.neubiorev.2012.07.010>

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