# Reliability of the AO Spine Thoracolumbar Injury Classification System (AO TLICS) Among Junior Surgeons: A Prospective Validation Study

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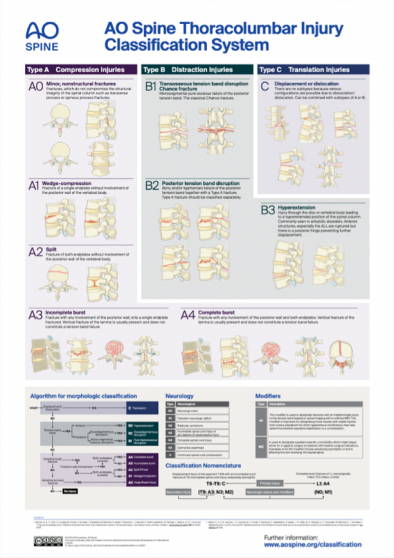
## INTRODUCTION

- Classification systems exist to safely guide inexperienced surgeons' management to result in optimal patient outcomes.
- Previous studies on AO TLICS' reliability (1) fail to assess surgeons' abilities to correctly recognise an injury by its full classification and management algorithm.
- This study aims to contribute data on AO TLICS' reliability and clinical usefulness by evaluating the agreement of junior surgeons' assessments with their senior counterpart.

## MATERIALS & METHODS

- In 2019-2020, two surveys were sent two months apart to eight junior surgeons and one orthopaedic spine consultant surgeon to assess the number and full classification of injuries on Spine MRI scans of 11 patients.
- There was a 100% response rate. Data analysis was performed using Microsoft excel.

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## RESULTS

- The average agreement was 81.3% for wedge injuries, 81.8% for burst injuries and 86.6% for tension band injuries.
- There was only one case of hyperextension injury at 87.5% and one Type C injury at 100% agreement.
- On average junior surgeons showed 86.7% agreement with surgical management but only 45.8% agreement with conservative management.
- Further assessment showed 90.8% agreement on the vertebral level injured, 85.4% agreement of Type C injuries, 67.0% of Type B injuries and 82.1% of Type A injuries.
- When classifying by subtypes, junior doctors showed only 33.9% agreement for B subtypes and 50.9% for A subtypes.

| | Wedge | Burst | Tension Band |
|---|---|---|---|
| Percentage Agreement (%) | 81.3 | 81.8 | 86.6 |

| | Type A | Type B | Type C |
|---|---|---|---|
| Percentage Agreement (%) | 82.1 | 67.0 | 85.4 |

| | Surgery | Conservative |
|---|---|---|
| Percentage Agreement (%) | 86.7 | 45.8 |

## CONCLUSIONS

- AO TLICS accurately facilitates junior surgeons' recognition of injury classification and which require surgical management but shows poorer agreement for classifying by subtypes, especially Type B injuries, and injuries to be managed conservatively.
- Thus, this study indicates that the management algorithm may result in unnecessary surgeries when used by junior surgeons.
- The authors suggest i) increasing user recognition of Type B injuries and ii) increasing user differentiation of A3 and A4 subtype injuries.

## LITERATURE CITED

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