

The Efficacy of Non-Fusion Dynamic Stabilization to Delay Adjacent Facet Degeneration: Comparison Study of Dynesys System and Trans-Foraminal Interbody Fusion at L4-5

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# Introduction

Non-fusion dynamic stabilization systems have been recently applied in the management of degenerative lumbar spinal diseases. Through clinical and radiological results with favorable outcomes have been reported, the effect to the adjacent segment degeneration (ASD) after application of non-fusion dynamic stabilization system is still unclear. Therefore the authors compared the postoperative changes in facet degeneration at L4-5 after Dynesys system and trans-foraminal interbody fusion (TLIF).

## Methods

The patients who underwent single level surgery at L4-5 with Dynesys system or TLIF were investigated. Of those, the patients who evaluated postoperative computed tomography (CT) of the lumbar spine after 12 months of operation were included. Facet degeneration was evaluated at each level (L1-2, L2-3, L3-4, L4-5 and L5-S1) and was graded into 0 to 3 according to the previous CT grade. The results between pre- and post-operation at the last evaluated on CT were compared.

## Results

Dynesys group were included 15 patients (M:F = 6:9, mean age of 58.3 years) and TLIF group were 22 patients (M:F = 11:11, mean age of 60.9 years). Sex, age, preoperative facet grade was not different between two groups. The last CT scan was obtained 24.9 months in Dynesys group and 30.7 months in TLIF group (p=0.57). The preand post-operative facet CT grade in Dynesys group was changed; 1.2 to 1.4 at L1-2, 1.0 to 1.3 at L2-3, 1.1 to 1.5 at L3-4, 2.3 to 2.7 at L4-5, and 0.9 to 1.2 at L5-S1. The change at above

# Learning Objectives

To compare the postoperative changes in facet degeneration at L4-5 after Dynesys system and trans-foraminal interbody fusion (TLIF)

#### References

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## Conclusions

Non-fusion dynamic stabilization system might be delay the ASD compared to the fusion surgery. Dynesys system itself, however, has limit to prevent the ASD in above and instrumented segment. The further development of more physiological dynamic stabilization system must be considered.

# Dynesys at L4-5



## TLIF at L4-5

