LUMBAR FACET JOINT ORIENTATION IN DEGENERATIVE SPONDYLOLISTHESIS: THE ROLE OF ETHNIC VARIATION IN ASIA-PACIFIC REGION — A STUDY FROM THE AOSAP (AOSPINE ASIA PACIFIC) RESEARCH COLLABORATION

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INTRODUCTION: Lumbar facet joint orientation is associated with degenerative spondylolisthesis (dSpl). The role of ethnicity regarding facet joint orientation remains uncertain. Hence, this study was performed across a wide-ranging population to assess the role of ethnicity in facet joint orientation with dSpl in the Asia-Pacific region.

METHODS: A multi-national, multi-ethnic cross-sectional image-based study was performed in 34 Asia-Pacific institutions, identifying 389 cases (mean age, 61.4 years; 63.3% females). On imaging, slip displacement magnitude, dSpl level, left / right facet joint angulation, width-curvature ratio, and gap width were noted. Facet joint measurements were performed at each level from L3-S1. Gender, age, body mass index, and ethnicity were also noted.

RESULTS: Degenerative spondylolisthesis was most prevalent at L4/L5 (72.4%). Among these, 28.8% were Indian, 28.5% Japanese, 17.5% Chinese, 8.2% Korean, 6.2% Thai, 4.6% Caucasian, 2.3% Filipino, 2.3% Malay, and 1.3 were of mixed Asian origin. Regarding patient demographics and displacement, a statistically significant difference between ethnicity to left / right facet joint angulations, width-curvature ratios, as well as gap widths from L3-S1 between specific ethnic groups was ($p<0.05$) observed.

CONCLUSIONS: This is the largest study to address the role of ethnicity upon lumbar facet joint orientation in dSpl. Ethnicity plays a role in facet joint orientation and may influence the occurrence and severity of dSpl or be a potential consequence. An understanding of ethnic variability may assist in identifying patients at risk of postsurgical development or progression of dSpl.