00505 A Pilot Study Using a New Rigid Brace "ScoliBrace" in the Treatment of Adolescent Idiopathic Scoliosis (AIS) in Singapore.

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Aims: Adolescent Idiopathic Scoliosis (AIS) is the most common form of scoliosis and is more common in females. Children/teenagers with scoliosis in the moderate range and who are skeletally immature are at high risk for progression. For this at-risk group, treatment with a rigid brace is recommended. The ScoliBrace is a new rigid brace that is designed using a novel 3-dimensional scanning technology. This is a hyper-corrective brace for AIS; early results in small cohorts of patients have been promising. We aim to evaluate the effectiveness of ScoliBrace in Asian AIS population.

Methodology: In this study, 17 female AIS patients aged 11-12 years were recruited from KK Hospital based on the Scoliosis Research Society's criteria for bracing. Each patient was prescribed a ScoliBrace and advised to wear the brace for up to 23 hours/day. They were asked to complete the Scoliosis Research Society (SRS)-22r questionnaire at recruitment, and undergo an in-brace x-ray 1 month after brace fitting and an out-of-brace x-ray 3 months after brace fitting.

Result: The overall mean score of the SRS-22r questionnaire was 4.3±0.8 (Function: 4.7±0.4; Pain: 4.7±0.4; Self Image: 3.5±0.5; Mental Health: 4.1±0.6). The mean Cobb angles between baseline (recruitment) and 1-month in-brace follow-up were significantly different (29.5°±2.9 vs. 21.8°±6.0°, $p < 0.001$), demonstrated by an in-brace correction of 26%. The mean Cobb angles between baseline and 3-months out-of-brace follow-up were not significantly different (29.5°±2.9 vs. 29.4°±8.1°, $p=0.978$), suggesting that there was no spinal curvature deterioration after 3 months of brace treatment. In addition, none of the 17 patients reported significant discomfort that limited or reduced their brace wear.

Conclusion: Early interim results from our small cohort of 17 AIS patients treated with the ScoliBrace showed in-brace correction of 26%. At 3-month follow up, there was no significant worsening of the scoliosis. No patient found the brace overly uncomfortable.