

## **A Longitudinal Follow Up of 3390 Students with Adolescent Idiopathic Scoliosis at Secondary and Tertiary Centres**

YAP Kihan<sup>1</sup>, NG Song Peng Matthew<sup>1</sup>, Veronica Tay<sup>2</sup>, Chow Khuan Yew<sup>2</sup>, Wong Hee Kit<sup>3</sup>, LAU Leok Lim<sup>3</sup>

<sup>1</sup>Yong Loo Lin School of Medicine, National University of Singapore, Singapore; <sup>2</sup>Student Health Centre, Health Promotion Board <sup>3</sup>Department of Orthopaedic Surgery, National University Health Systems, Singapore.

**Introduction:** Singapore has implemented a school-based screening programme since 1981. This study aims to determine the clinical characteristics and outcomes of the students at the secondary (SSC) and tertiary screening centres (TSC).

**Materials and Methods:** A cohort of students was identified via the Electronic Clinical Information system in 2013 at SSC, and was followed-up longitudinally to an end point – where they were either discharged, defaulted, or referred to TSC. At TSC, the students were also followed-up to an end point – where they were either discharged, defaulted or escalated to surgery. The relevant clinical and radiological information were retrieved and analysed with R using appropriate statistical tests. P values  $\leq 0.05$  were taken as statistically significant.

**Results:** 3390 students were identified in this longitudinal cohort and of these students, 445 (13.1%) were referred to TSC. For these 445 students, at presentation at SSC, the mean age was 11.1 yo, median Risser stage was 0, and 64% were pre-menarche. Students referred were more likely to have a family history of scoliosis ( $p < 0.001$ ). Family history of scoliosis was not associated with the treatment groups ( $p = 0.28$ ). The mean Cobb angles at the end point were 26°, 29° and 50° for observation group, brace group and surgical group respectively.

**Conclusion:** The longitudinal cohort study showed that from evaluation at SSC, 13% required further management at TSC of which 58% required interventions. Those who required surgical interventions were younger, with lower Risser staging and larger Cobb angles at presentation.