

PREVALENCE STUDY OF DEGENERATIVE LUMBAR SCOLIOSIS IN MALAYSIAN POPULATION

W Hau¹, Kamalnizat I², Sabarul A. Mokhtar²

¹Department of Orthopaedics, Universiti Kebangsaan Malaysia

²Department of Orthopaedics and Traumatology, Universiti Kebangsaan Malaysia

INTRODUCTION:

Degenerative Lumbar Scoliosis (DLS) is defined as a lateral curvature of spine above 10°. The prevalence has been reported to range from 4% to 71%. To our knowledge, there are few studies and none in Malaysia addressing the prevalence of DLS and factors that may be correlated with the curve severity.

METHODS:

A retrospective study of all Dual Energy X-ray Absorptiometry (DEXA) Scan of patients above 40 years old from 2014-2017 in Hospital Canselor Tuanku Muhriz(HCTM), UKM. Patients with any previous lumbar spine fracture, infection, tumour or operation were excluded. Cobb angle was calculated from the DEXA spinal image. Other parameters recorded were age, gender, ethnic and bone mineral density (T-score).

RESULTS:

A total of 3006 DEXA were studied and 287 (9.5%) were identified to have DLS. The mean Cobb angle was 16.2°. The average age of the patients with DLS was 66 years old (range 40 to 96). Majority of the patients with DLS were female (93.7%) Ethnic distribution for patients with DLS were Chinese(11.3%), Malay(8.3%), Indian(6.6%) and others(5.6%). Most of the scoliotic curve were right sided and with L2 as apex. Degenerative lumbar scoliosis usually occurs in patients older than forty years of age. Osteoporosis group is nearly 2-folds higher risk to develop DLS.

DISCUSSIONS:

An accurate understanding of the prevalence of DLS is important in determining the impact of this disorder on the patients' quality of life and substantial morbidity. The use of DEXA lumbar spine image to identify DLS had been used by Pappou et al. in 2006. They reported strong correlation between Cobb angle measured on

erect plain radiograph and Cobb angle measures on DEXA Spinal image.

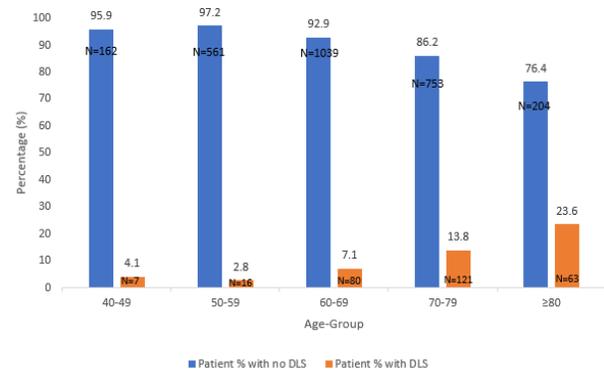


Figure 1. Graph demonstrating degenerative lumbar scoliosis prevalence according to age

CONCLUSION:

DLS in Malaysian is 9.5%. Patient with osteoporosis and older age group has higher risk of developing DLS. Majority of the patients with DLS were female and Chinese.

REFERENCES:

- Liu G, Tan JH, Ee G. Morphology and Prevalence Study of Lumbar Scoliosis in 7,075 Multiracial Asian Adults. J Bone Joint Surg Am 2016;98:1307-1312.
- Ploumis A, Transfledt EE, Denis F. Degenerative lumbar scoliosis associated with spinal stenosis. Spine J 2007;7(4):428-436.
- Pappou IP, Girardi FP, Sandhu HS, et al. Discordantly high spinal bone mineral density values in patients with adult lumbar scoliosis. Spine (Phila Pa 1976) 2006;31(14):1614-1620.