

SERUM CALCIUM & BONE SPECIFIC ALKALINE PHOSPHATASE IN LUMBAR DISC HERNIATION AND DEGENERATION

ND Withanage^{1#}, S Perera², H Peiris³ LV Athiththan³

¹Department of Allied Health Sciences, Faculty of Medical Sciences, University of Sri Jayewardenepura

²The Central Hospital, Colombo 8

³Department of Biochemistry, Faculty of Medical Sciences, University of Sri Jayewardenepura

For correspondence withanagend@sjp.ac.lk

Calcium and serum bone specific alkaline phosphatase (BAP) have been studied as prognostic markers in calcification and degeneration in lumbar disc herniation and degeneration (LDHD). Objective of the study was to identify the impact of serum calcium and BAP in LDHD. Volunteer subjects (106) with confirmed lumbar disc herniation and undergoing lumbar discectomy from a selected hospital in Colombo were recruited. Test group were categorized into subject with degeneration and herniation (n=38) and herniation only (n=68). Controls were age and sex matched individuals without previous history of back pain and had not received medication for back pain during the past one month (n = 106). Venous blood was obtained from all the participants and serum was analysed using KONE 20 XT clinical analyser and Enzyme Linked Immunosorbent Assay for serum calcium and BAP respectively. There was an equal distribution of gender in the degenerated and herniated patients and further analysis was done separately for subjects (both females and males)

above and below 50 years of age. Majority (64 %) of the test patients presented with disc herniation only. Similar pattern of distribution was observed in degenerated and herniated subjects with age below and above 50 years in both sexes suggesting that degeneration does not associate with age as indicated in previous studies. Mean serum calcium levels were in normal reference range (8.5 -10.5 mg/dL) in all three groups (Herniated, Herniated & Degenerated and Control) it was significantly different among females below 50 years and males above 50 years. Herniated subjects had the lowest value for serum calcium. However, serum BAP level was significantly different only in males above 50 years of age (χ^2 (2), 6.26; p=.044). Hence serum Calcium and BAP does not play a major role in LDHD. Further investigations are needed to re-establish the normal reference range and to use calcium as prognostic marker in LDHD.

Key words: Lumbar disc herniation and degeneration, Serum calcium, Serum Bone specific Alkaline Phosphatase