

OP 22

Neck anthropometric measurements and intensity of pain in patients with chronic neck pain: A cross sectional study

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Background: Neck pain is common among the adult population and it cause absenteeism at work in the working population.

Objective: To investigate the relationship between intensity of neck pain and the anthropometric measurements of neck in patients with chronic neck pain.

Method: A cross sectional study was conducted on 324 patients with chronic neck pain aged between 20-69 years attending the rheumatology clinic at the Colombo South Teaching hospital. Data were collected by using an interviewer-administered questionnaire and lateral cervical x-rays of patients. Intensity of pain was measured by a visual analog scale 0 mm (no pain) to 100 mm. Cervical curvature and absolute neck length was measured in lateral cervical x-rays of the chronic neck pain patients using AutoCAD 2007. Neck circumference were measured and the relative neck length and Body Mass Index (BMI) was calculated. Data were analyzed by SPSS and Microsoft Excel.

Results: The mean age of the patients was 52.2±11.1 years and 258 (79.6%) were females. Mean intensity of pain was 73.0±10.7. The mean intensity of pain was 74.7±11.2 in males and 73.6±11.9 in females. The intensity of pain was not significantly associated with gender ($p>0.05$). There was a significant weak negative correlation between intensity of pain and age ($p<0.05$). There was a significant ($p<0.05$), low positive ($r=0.16$) correlation between intensity of pain and BMI. The majority (60.4%, 196/324) of chronic neck pain patients had hyper lordosis ($>45^\circ$). The intensity of pain was significantly associated with cervical curvature ($p<0.05$). The mean neck circumference of male and female were 364.2±36.1 mm and 340.1±29.8 mm. The mean absolute neck length was 98.2±10.0 mm in males and 92.1±10.7 mm in females. Neck circumference, absolute neck length and relative neck length were not associated with intensity of pain in both sexes.

Conclusion: Intensity of pain was associated with cervical curvature and the majority of chronic neck pain patients had hyperlordosis.