Abstract

Patients with idiopathic scoliosis are exposed to approximately 25 radiographic examinations of their spine throughout the clinical follow-up using the Cobb angle. Several non-invasive and radiation-free methods have been proposed to measure scoliotic deformities, including the scoliometer. Objectives: To measure the intra- and interrater reliability of the scoliometer measurements, to assess the correlation of the values obtained by the scoliometer measurements with the Cobb angles obtained by radiography, and to assess the sensitivity and specificity of the scoliometer measurements for the different diagnostic criteria for the referral of idiopathic scoliosis. Method: Sixty-four patients were selected for the study: half with idiopathic scoliosis and half without. The 17 levels of the spine of each volunteer were measured with a scoliometer in the forward bending position. The measurements were performed three times on 42 volunteers by two different raters to obtain data for calculating the reliability values. Anteroposterior radiographs were taken to determine the Cobb angles, which were then compared with the highest trunk rotation value. Sensitivity and specificity were evaluated using radiograph criteria for referral: a Cobb angle of 10° and axial trunk rotation values between 5° and 10°. Results: Excellent intrarater reliability values and very good interrater reliability values were obtained. The correlation between the scoliometer measurements and radiograph analyses was considered good (r=0.7, p<0.05). The highest sensitivity value was for a trunk rotation of 5° at 87%. Conclusions: The scoliometer measurements showed a good correlation with the radiographic measurements.

Keywords

Physical therapy, scoliometer, scoliosis, spine, evaluation.