

Oral presentation

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Respiratory muscle strength in adolescents with idiopathic scoliosis

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Objective

The aim of the study was to assess the respiratory muscle strength in adolescents with idiopathic scoliosis (IS), conservatively treated using exercises by Dobosiewicz [1].

Study design

The study group included eighty-one subjects (65 female, 16 male) aged 7 to 17 years (mean age 14.3 ± 2.3 years) with thoracic scoliosis ($n = 44$) and double major scoliosis ($n = 37$). Mean Cobb angle was 39 degrees (SD 17.8) and mean apical vertebral rotation (AVR) was 12 ± 7.1 degrees.

Methods

Vital capacity (VC) was measured using Jaeger's spirometer and values were compared to Zapletal's recommendations [2]. Maximal static respiratory pressures including maximal inspiratory pressure (MIP) and maximal expiratory pressure (MEP), were measured according to W. Tomalak's recommendations for Polish children [3]. Measurements were made using a portable, digital pressure meter equipped with the Omega PX25 pressure transducer (ZETA product – model MMM2).

Results and conclusion

The maximal static respiratory pressures (percent predicted value) in children with scoliosis conservatively treated using exercises by Dobosiewicz were normal (MIP mean $119.1 \pm 40.25\%$). For MEP, values (mean $164.9 \pm 35.96\%$) were even higher than predicted, which may be related to age (the norm of adolescents is extrapolated)

and/or the effect of rehabilitation on physical performance.

References

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