



Correlation between sensitization and range of motion in children and adolescents with migraine

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Introduction

Migraine affects 7.7% of children and adolescents and presents with short duration, bilateral and generally fronto-temporal localization, however, the relationship of pain and sensitivity symptoms and their correlations with physical tests as well as range of motion are not well understood in these groups.

Objective

Correlate sensitization including allodynia and pressure pain threshold (PPT) of cervical muscles with neck mobility in children and adolescents with migraine.

Methods

Fifty children (CH) and adolescents (AD) diagnosed with migraine by ICHD-III were screened, of both sexes, aged between 6 and 17 years at the tertiary headache outpatient clinic. Allodynia was assessed by the adapted allodynia questionnaire based on the ICHD-III and the sensitivity of the cervical muscles sternocleidomastoid, elevator, suboccipital, trapezius and scalene by the pressure pain threshold (PPT) using a digital algometer DDK-20 Kratos®. The active mobility of the cervical spine (ROM) was evaluated in the movements of flexion, extension, lateral flexion, and rotation by the Flexion Rotation Test (FRT), using the CROM®.

Results

The mean age of patients was 11.7 years (SD=3.0), most of them female (n=31/62%), adolescents (n=28/56%) with a diagnosis of episodic migraine (n=32/64%), of low intensity (2.4; SD=0.6), pulsatile quality, duration in hours (18.0; SD=22.7) and more than half of the sample had no aura (n=32/64%). More than 70% of the sample had some comorbidity associated with the diagnosis of migraine, and neurological diseases, such as epilepsy, were more prevalent in both children (25.2%) and adolescents (26.3%), followed by respiratory diseases in children (20.1%) and psychological conditions in adolescents (19.8%). Pearson's correlation values of the ROM and PPT ranged for the cervical muscles for flexion and extension (r=0.019 to 0.550) and lateral flexion (r=0.002 to 0.136) and between PPT of the cervical muscles and left FRT (r=0.043 to 0.336) and right FRT (r=0.051 to 0.336) were classified as weak to moderate and not significant. Correlations between cutaneous allodynia and ROM for flexion and extension (r=0.024), lateral flexion (r=0.278) and rotation (r=0.038) and for right FRT (rho=0.085) and left FRT (rho=0.182), had $p > 0.05$.

Conclusion

Cervical sensitization represented by allodynia and LDP was not associated with cervical mobility in children and adolescents with migraine.

Keywords: Headache, Pediatrics, Central awareness.

Acknowledgments/Funding: Research Support Foundation of the State of São Paulo (FAPESP) (Process: 2015/18031-5) and the Coordination for the Improvement of Higher Education Personnel—Brazil (CAPES)—Financial code 001.