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Neurophysiologic pain response in patients with juvenlie idiopathic arthritis - a pilot study

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Introduction

Pain is a common symptom in children and adolescents with JIA. It has been hypothesized that frequent pain experiences sensitize pain processing pathways, resulting in hypersensitivity to later painful stimuli. A lower pain threshold (PT) and pain tolerance in JIA patients have been demonstrated in previous studies using pressure algometry and the cold pressor task.

Objectives

To investigate pain thresholds in adolescents with JIA compared to age and sex matched healthy controls, using several modalities for experimental pain testing.

Methods

Consecutive adolescents with JIA (16-18 years) were recruited from the pediatric rheumatology outpatient clinic at St. Olavs Hospital. Healthy controls were recruited from a local upper secondary school. Both completed a validated questionnaire on health and quality of life (SF-36), and reported pain from the last week (VAS scale). Quantitative sensory testing was conducted, and thermal detection pain thresholds (PTs) recorded. A thermal element was held against three specified locations of the participant's skin, and the participant was instructed to press a button when he/she felt changes in temperature or pain. Pressure algometry was performed on two well-defined anatomical areas, giving the pressure pain threshold (PPT).

Results

Compared to 19 healthy controls, the 14 patients with JIA reported more pain during the last week, and had a less favorable score in the physical SF-36 domains, but no difference in the mental health domains. They displayed a lower PPT, but similar cold and warmth PT compared to the controls. When subdividing JIA patients with active and inactive disease, patients with inactive disease had a lower cold PT and PPT, and a tendency towards a lower heat PT compared to controls. Patients with active disease had a tendency towards higher PTs in all three modalities compared to both healthy adolescents and patients with inactive disease.

Conclusion

Our results indicate that JIA patients may be subject to a sensitization, giving lower pain thresholds in inactive disease, but once the disease is active, painful arthritis may act as a diversion leading to increased rather than lowered PT.

Disclosure of interest

None declared.

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