Pediatric Rheumatology

Poster presentation

Intra- and interobserver reliability of ultrasonographic cartilage thickness assessments in small and large joint in healthy children

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Introduction

There is an increasing interest among paediatric rheumatologist for using ultrasonography (US) in the daily clinical examination of children with JIA. Loss of joint cartilage may be an early feature of destructive disease in JIA. However, US still needs validation before it can be used as a diagnostic bedside tool in a pediatric setting.

Purpose

This study aims to assess the inter- and intraobserver reliability of US measurements of cartilage thickness in the joints of healthy children.

Materials and methods

740 joints of 74 healthy children (27 girls/47 boys), mean aged 11.3 years were examined with bilateral US in 5 preselected joints to assess the interobserver variability. In 17 of these children (6 girls/11 boys), mean aged 10.1 years, 170 joints was examined in an intraobserver substudy, with a 2 week interval between the first and second examination. All US measurements were obtained blinded.

Results

Knee 0.26 mm**diff. interobserver), Ankle -0.14 mm*, Wrist 0.09 mm*

MCP-0.11 mm* and PIP -0.09 mm*. Intraobserver similar results was found.

No statistical significant difference between/within observers.

Conclusion

We found a good inter- and intraobserver agreement expressed in CV less than 10% in 3 out of 5 examined joints. The inter- and intraobserver variation seemed not to related to joint size. This suggest that positioning of the joint and the transducer is of major importance for reproducible US measurements and that US is a feasible method for CTh measurements in a paediatric setting.