

Poster presentation

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Efficacy of oral versus subcutaneous methotrexate in children with juvenile idiopathic arthritis

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Background

Therapy of juvenile idiopathic arthritis (JIA) is based on, among various other treatments, methotrexate (MTX). Pharmacokinetic data indicate a lower drug resorption rate when applied orally (po) versus subcutaneous (sc) administration.

Objectives

We aimed to compare the effects of po and sc applied MTX on the JIA-disease course.

Methods

According to MTX-administration route, children were divided into four groups: sc, po, switching from po to sc and from sc to po. Based on joint counts (pain, swelling and limited range of motion), patient's and physician's visual analogue scale for disease activity (VAS) and erythrocyte sedimentation rate (ESR) or C-reactive protein (CRP), a combined overall disease activity score (entitled Co-score, CoS) was generated for each patient. Statistically paired T-test and ANCOVA were applied.

Results

For the sc group, the ESR-CoS improved on average by 2.24 units (CI: 1.57–2.91; $p < 0.0001$) and the CRP-CoS by 1.61 units (CI: 0.87–2.35; $p < 0.0002$). In the po group, the ESR-CoS improved by 2.37 units (CI: 1.7–3.04; $p < 0.0001$) and the CRP-CoS by 2.16 units (CI: 1.48–2.85; $p < 0.0001$). In the po to sc switcher group, both scores

showed insignificant improvement during the po phase ($p > 0.05$). After the change to sc administration, both scores significantly improved ($p < 0.0007$ and $p < 0.0005$ respectively). In the sc to po group, data from only four patients were analyzable and therefore, statistically irrelevant.

Conclusion

Considering data from adult rheumatoid arthritis studies and MTX pharmacokinetics, our results support to some extent sc MTX-administration in children, at least at treatment initiation, emphasizing the need of prospective investigations.

References

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