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Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.2366

THURSDAY, 14 JUNE 2018

Rheumatoid arthritis – biological DMARDs

THU0547

REAL-WORLD EFFECTIVENESS OF EARLY AGGRESSIVE TREATMENT WITH BIOLOGICAL DISEASE-MODIFYING ANTIRHEUMATIC DRUGS FOR THE TREATMENT OF NEWLY DIAGNOSED POLYARTICULAR FORM OF JUVENILE IDIOPATHIC ARTHRITIS

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Background: Limited evidence from randomised clinical trial suggested early aggressive treatment with biological disease modifying antirheumatic drugs (DMARDs) maybe a better treatment strategy in children with polyarticular form of Juvenile idiopathic arthritis (pJIA).¹ Three consensus treatment plans (CTP) were recommended for treating children with newly onset of pJIA.² The real-world effectiveness is unknown.

Objectives: Evaluate the comparative effectiveness of early combination CTP vs. the step-up CTP, in treating children with newly diagnosed pJIA, utilising electronic health records (EHR) data collected from routine clinical care.

Methods: This inception cohort is derived from data captured in a single institute EHR from January 2009 to July 2017. Eligible patients are 2–16 years of age, newly (<6 m) diagnosed with pJIA and treated on DMARD. The first clinical encounter initiate DMARDs is identified as the baseline. The primary end point is clinical Juvenile Arthritis Disease Activity Score (cJADAS) 6 months after the treatment.

Results: Out of 1834 pJIA patients captured in EHR, 432 are eligible for the study. Most patients (362, 84%) initiated DMARD within 6 month of diagnosis: 105 (29%) on early combination and 257 (71%) on step-up plan. Three months following the initial DMARD assignment, 98 (93%) and 244 (95%) remained on the initial early combination and step-up plan respectively, thus are used in this study. Patients on early combination had significantly higher cJADAS score at the baseline (15.5±6.6 vs. 12.5±5.9; Student P value<0.01), and higher rate of RF (18% vs. 7%, Chisq p<0.01). After 6 months of treatment, their cJADAS scores are more comparable (mean ±SD of 6.9±5.4 in early combination, and 7.1±6.1 in step-up; Student T p=0.7). After statistically adjusting for treatment selection bias, causal inference methods suggest lower cJADAS is expected had the patient been treated on early combination than on the step-up plan, mean and 95% confidence interval of averaged treatment effect is 2.90 (0.89, 4.91).

Conclusions: The early combination approach improves clinical outcomes at 6 months more effectively than the step-up strategy in children with newly onset pJIA.

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Acknowledgements: Funding Support from PCORI, ME-1408–19 894 (PI, Huang)

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.3705

THURSDAY, 14 JUNE 2018

Diagnostics and imaging procedures

THU0548

STANDARDISED PROCEDURES FOR ULTRASOUND IMAGING IN PAEDIATRIC RHEUMATOLOGY: PROGRESS OF EULAR/PRES TASK FORCE

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Background: Musculoskeletal ultrasound (MSUS) is dependent on sensitivity of the machine used and the skills of the operator. Additional specificities are unique features of the growing skeleton, which include age-related variation of the thickness of the articular cartilage (due to incomplete ossification) and the presence of physiologically detected vascularisation even in healthy children.

Objectives: EULAR/PreS task force objective was to develop EULAR/PreS Standardised Procedures for Ultrasound Imaging in Paediatric Rheumatology through a consensus process among rheumatologists, paediatric rheumatologists, and radiologists highly experienced in the performance, teaching and research in paediatric MSUS in rheumatic diseases.

Methods: In the first phase we performed a systematic literature review (SLR) on guidelines for MSUS for children endorsed by international societies and articles on how to perform MSUS scanning in children. Based on the SLR results, project conveners formulated a Delphi survey by selecting the items to be included (i.e. musculoskeletal anatomic structures evaluable by US, scanning technique, and their lesions/abnormalities detectable by US at the principal joint areas). The Delphi survey was distributed among a broad panel of experts in MSUS, selected for their high experience in the performance, teaching and research in MSUS in children. Based on the Delphi results the main anatomical structures (for definitions, photo and video recordings) were selected to be analysed in the final phase organised as an exercise on live healthy children models. The meeting involved: 16 project participants (13 paediatric US experts, fellow, as well as, AHP and PARE representatives), 16 healthy children models (representing four different age groups) accompanied by their parents (who had signed informed consent to participate), 4 photo/imaging technicians, 2 expert technicians in US machines.

Results: Structures from 8 musculoskeletal areas (i.e. shoulder, elbow, wrist and hand, hip, knee, ankle and foot) in 4 age groups of children were selected. Detailed scanning procedures (i.e. patient position, probe placement, scanning method and bony/other landmarks) were defined. We recorded the reference photo (live and US image) and video (procedure video clip and US video record) of the scanning procedures. As a result, we obtained photo and video image library with a detailed description of the standardised US procedures in children which can be used as EULAR/PreS web-based educational application.

Conclusions: This task force has produced a consensus-based comprehensive and practical framework on standardised procedures for MSUS imaging in paediatric rheumatology.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.3775