THU0538 ABSTRACT WITHDRAWN

THU0539 SERUM SOLUBLE CD25: AN USEFUL BIOMARKER OF MACROPHAGE ACTIVATION SYNDROME IN SYSTEMIC JUVENILE IDIOPATHIC ARTHRITIS

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Background: Systemic juvenile idiopathic arthritis (SJIA) is an auto-inflammatory disorder secondary to innate immune dysfunction with a propensity to develop macrophage activation syndrome (MAS), a life-threatening condition (1). sCD25 has been used as a sensitive biomarker for the diagnosis of Hemophagocytic lymphohistiocytosis which has similarities in clinical features and pathogenesis to MAS (2).

Objectives: To assay serum soluble CD25 in children with systemic juvenile idiopathic arthritis (SJIA) and to compare levels of sCD25 in children with inactive disease, active disease and those with macrophage activation syndrome (MAS).

Methods: This prospective study was conducted in a tertiary care referral centre in North India from January 2017 to June 2018. All patients fulfilling the International League of Associations for Rheumatology (ILAR) 2001 criteria for SJIA were eligible for enrolment. At enrolment, all patients were examined clinically for signs of disease activity. Appropriate investigations were carried out and sCD25 was analyzed by using commercially available sCD25/IL-2R ELISA kit.

Results: A total of 35 children (1-18 years) with 43 events were included in the study. Mean age at enrolment in the study was 7.3±3.59 years with male to female ratio of 2.5. Based on clinical features and investigations, events were categorized into 3 groups; SJIA with inactive disease (15; 34.9%), SJIA with active disease (15; 34.9%) and SJIA with MAS (13; 30.2%). Mean sCD25 levels in the study population were 10,966.02 ± 10,854.93 pg/ml. Children with inactive disease, active disease and disease with MAS had mean ± SD serum sCD25 levels of 4710.6 ± 1817.04 pg/ml, 7604 ± 2376.24 pg/ml, and 22062.9 ± 14335.97 pg/ml respectively. Although, Mean level of sCD25 in children with active disease was higher than those with inactive disease, but no significant difference could be found. sCD25 levels significantly (p value 0.0001) varied between MAS and other 2 groups. sCD25 cut off level of 10,385 pg/ml was found to have sensitivity of 100% and specificity of 96.7% in differentiating MAS in SJIA from disease flare and inactive disease. There was no significant correlation of sCD25 with demographic parameters, Total leucocyte count, erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), platelet counts, urea, creatinine, prothrombin time, activated partial prothrombin time and fibrinogen levels. A correlation of sCD25 was found with levels of haemoglobin (p-value .01), ferritin (p-value .001), aspartate aminotransferase (AST) (p-value .000), alanine aminotransferase (ALT) (p-value .000), alkaline phosphatase (ALP) (p-value .005) and triglycerides (p-value .001). Higher sCD25 levels were found in patients who had low Hb, elevated ferritin, elevated AST, ALT, ALP and serum triglyceride levels.

Conclusion: sCD25 is a useful biomarker in differentiating MAS in SJIA from disease flare and inactive disease with sensitivity and specificity of 100% and 96.7% respectively at a cut off level of 10,385 pg/ml. Coupling sCD25 with other laboratory parameters may be useful for early diagnosis of MAS in SJIA.

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Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.3038

THU0540 SYSTEMATIC REVIEW OF BIOLOGICAL TREATMENT OF DEFICIENCY OF INTERLEUKIN-36 RECEPTOR ANTAGONIST (DITRA) IN CHILDREN AND ADOLESCENTS

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Background: Deficiency of interleukin-36 receptor antagonist (DITRA) is a life threatening autoinflammatory disease caused by autosomal recessive mutations of the *IL36RN* gene leading to recurrent episodes of generalized pustular psoriasis with systemic inflammation and fever. The disease is rare and no standardized treatment guidelines exist

Objectives: To systematically review and analyze the literature on biologically treated pediatric DITRA patients

Methods: A NCBI pubmed database research was performed to identify all relevant articles on pediatric DITRA patients treated with biologicals. According to defined response criteria therapeutic efficacy was analyzed.

Results: Our literature research revealed 13 pediatric patients with DITRA and biological treatment. Ten patients were homozygous including six with the p.Leu27Pro, three with the p.Arg10 Argfs* and one with the p. Thr123Met mutation and three were compound heterozygous. We add an unreported DITRA patient with a compound heterozygous *IL36RN* p. Pro76Leu/pSer113Leu mutation. In total 29 flares in 14 patients were treated with biological agents- targeting IL-1/R, IL-17, IL-12/23 and TNF-α. Complete response was achieved in 15 (52%), partial in 4 (14%), and no response in 10 (34%) of the flares. Response rates were heterogeneous among the different agents. While complete/partial/no response with inhibition of TNF-alpha could be achieved in 6 (46%)/3 (23%)/4 (31%), the inhibition of IL-17 and of IL-12/23 led in each 4 flares to a 100% complete response. IL-1/R inhibition led to complete/partial response in each 1 (13%) and was not effective in 6 (75%) flares. Of note, the unreported patient was successfully treated with weekly dosed adalimumab.

Conclusion: DITRA is a rare disease that has to be considered in patients with generalized pustular psoriasis with systemic inflammation and fever. It can be effectively treated with specific biological inhibition of TNF-alpha, IL-12/23 and IL- 17, while anti-IL-1/R treatment seems less effective. Weekly dosed adalimumab appears to be a novel treatment option for pediatric patients. Further reports and studies of biological treated pediatric DITRA patients are warranted for evaluation of optimal treatment.

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Disclosure of Interests: Toni Hospach Speakers bureau: Chugai, Roche, Novartis, Fabian Glowatzki: None declared, Friederike Blankenburg: None declared, Dennis Conzelmann: None declared, Christian Strinkorb: None declared, Chris Sandra Muellerschoen: None declared, Peter Driesch von den: None declared, Lisa Koehler: None declared, Meino Rohlf: None declared, Christoph Klein: None declared, Fabian Hauck: None declared
DOI: 10.1136/annrheumdis-2019-eular.1184

THU0541 ANTI-VACCINE ANTIBODY LEVELS IN JUVENILE IDIOPATHIC ARTHRITIS PATIENTS: PRELIMINARY DATA IN 90 PATIENTS

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Background: Patients with juvenile idiopathic arthritis (JIA) may have lower protective levels of anti-vaccine antibodies (AVA) due to high inflammatory activity, interrupted or incomplete vaccination schedule, using of immune-modulating drugs, e.g. systemic corticosteroids (CS), methotrexate (MTX) and biologics [1].

Objectives: The aim of our study was to evaluate levels of AVA in the patients with JIA.