FRI0578

LACC1 MUTATION IN THREE SIBLINGS WITH POLYARTHRITIS WITHOUT SYSTEMIC MANIFESTATIONS

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Background: Juvenile idiopathic arthritis (JIA) is a complex group of disorders characterized by wide phenotypic diversity and genetic heterogeneity. It has multifactorial etiology varying among different subtypes. There are emerging reports on new gene loci being identified especially in families with many affected members (1,2)

Objectives: To report 3 siblings with polyarthritis who were detected to have mutation in Laccase domain containing 1 (LACC1) gene.

Methods: We reviewed case records of 3 siblings with infantile onset polyarthritis and performed whole exome sequencing on their DNA samples for LACC1, MMP2 and WISP genes.

Results: A non-consanguineous family from north-western part of India reported with 3 daughters having polyarticular joint disease. The chronology of symptoms was similar in all 3 children. Joint symptoms started in later half of infancy with swelling of knee and ankle. This disease was progressive and over the following 2 years there was involvement of small joints and cervical spine too (Figure 1) along with deformities and contractures. The investigations at the time of first evaluation are given in Table 1. Radiographs in all 3 sisters showed osteoporosis and erosion of vertebrae (Figure 2).

The children were initially started on naproxen. Later, in view of rheumatoid factor positivity in eldest sister we decided to give them a trial of oral prednisolone (initially 1 mg/kg and subsequently tapered) and subcutaneous methotrexate (10 mg/m²/week). Methotrexate was continued on long term basis. Over the next 24 months of follow-up the clinical improvement has been sustained.

Whole-exome-sequencing in all three girls has revealed mutation in LACC1 gene [Exon 4; c.832G>C; p.(Ala278Pro), Homozygous, Autosomal recessive].

Conclusion: This case report further provides evidence to the emerging association of LACC1 mutation with familial aggregation of JIA (1,2). Long term follow-up of these patients is necessary to determine the natural course of this intriguing clinical entity.

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FRI0579

PREDNISONE VERSUS STANDARD THERAPY IN SYDENHAM'S CHOREA: RESULTS FROM A RETROSPECTIVE STUDY

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Background: Sydenham's chorea is a major and delayed manifestation of acute rheumatic fever [1] and is considered to be a prototype of an autoimmune disorder triggered by an infectious agent. Aside from conventional symptomatic treatment (carbamazepine, valproate, neuroleptics), the use of steroids has also been advocated, mainly in severe, drug-resistant cases or if clinically disabling side effects develop with first line therapies. However the evidence of corticosteroids efficacy is weak.

Objectives: To describe the efficacy of corticosteroids therapy versus standard therapy in children affected by Sydenham's Chorea in a cohort of Italian patients with acute rheumatic fever (ARF).

Methods: A retrospective observational study was conducted. The hospital records for all children diagnosed as having ARF between January 2007 and December 2017 in the Pediatric Rheumatology Division of the Meyer Children Hospital (Florence) and IRCCS Burlo Garofolo (Trieste) were reviewed. The diagnosis of ARF was made by pediatric rheumatologists and all the children discharged with a ICD 9 code consistent with ARF were included. For the purpose of the study only patients with Sydenham's Chorea were enrolled. Files were analyzed for demographic data, clinical and laboratory findings on admission and during the hospital stay and patients with incomplete information were excluded. Time and resolution of choreic symptoms were evaluated in consideration of presence or absence of corticosteroid therapy.

Results: Thirty patients were enrolled; 23 out of 30 (76%) had generalized chorea. 15 (50%) were treated with prednisone (2 mg/kg/day in a single administration per day for 14 days before tapering), 11 (36.6%) were not treated with medications and 4 (13.3%) received pimozide or sodium valproate. We considered together patients who did not receive any specific therapy for chorea and patients who received only symptomatic anti-chorea drugs (pimozide in 3 cases and sodium valproate in 1 case). Therefore we obtained two groups of 15 participants each: "Prednisone group" and "Standard therapy group". The time required for clinical improvement in the two groups appeared statistically different (P = 0.002). In "Prednisone group" the median time for improvement was 4.0 days (interquartile range: 3) whereas in "Standard therapy group" it was 16.0 days (interquartile range: 16). Furthermore, the "Prednisone group" had a median remission time of 30.0 days (interquartile range: 34) whereas "Standard therapy group" presented a median remission time of 135.0 days (interquartile range: 309) (P < 0.001). At least one episode of relapse occurred in 1 (6.7%) out of 15 patients in the "Prednisone group" and in 3 patients (20%) in the "Standard therapy group". However, the difference is not statistically significant (p = 0.598).

Conclusion: Our study shows that corticosteroid therapy is associated with a faster resolution of Sydenham's Chorea's symptoms compared to treatments considered of first line, such as: no therapy, valproate or pimozide.

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FRI0580

ULTRASONOGRAPHY SCORE CORRELATES WITH DISEASE ACTIVITY IN JUVENILE IDIOPATHIC ARTHRITIS – ENTHESITIS RELATED ARTHRITIS – A CROSS SECTIONAL OBSERVATIONAL STUDY FROM INDIA

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Background: Enthesitis is a distinct clinical hallmark of spondyloarthropathy in children and adults. Ultrasonography (US) is a powerful tool to detect enthesitis. There are only a few studies on US detected enthesitis in Juvenile Idiopathic Arthritis - Enthesitis Related Arthritis (JIA-ERA) from India.

Objectives: To assess the presence of clinical and US detected enthesitis in JIA- ERA and to correlate with disease activity.

Methods: 51 consecutive JIA-ERA patients fulfilling the ILAR classification criteria were evaluated clinically and sonographically from October 2016 to September 2017 in a tertiary care centre from Northern India. Enthesitis was clinically assessed using the MASES (Maastricht Ankylosing Spondylitis Enthesitis Score). Additionally peripheral enthesal sites of lower limb (insertion of plantar fascia at calcaneal tuberosity, insertion of Achilles at superior pole of calcaneus, quadriceps tendon at superior pole of patella and patellar tendons proximally at inferior pole of patella and distally at anterior tibial tuberosity) were clinically and sonographically assessed for enthesitis. The clinical assessment included JADAS 27 and BASDAI for disease activity and BASFI for function. Ultrasound was performed with a multi-frequency linear-array transducer (8-13MHz) using B-mode settings of dynamic range (40-50dB); GS- frequency (11-13 MHz); GS gain (60 dB). Power Doppler (PD) mode settings used: pulsed repetition frequency (400-800 Hz); PD-gain (highest possible gain with minimum background noise). US parameters (hypo echogenicity, increased thickness of entheses, intratendinous calcification, enthesophyte and erosion(s)) were assessed according to OMERACT 2014 definitions of ultrasonography

findings of enthesitis (1). Each parameter at every site was scored as 1 if present and 0 if absent. Grading of Power Doppler signals was done as per definition by Kiris et al (2); Grade 0-no signal, Grade 1- separate dot signals or short linear signals, Grade 2- vascularity involving less than half of the enthesis, Grade 3-vascularity involving more than half of the enthesis. US enthesitis score was calculated by adding 1 point for each positive finding and the grade of PD. PD score was calculated by adding the grade of PD. Presence of clinical and US detected enthesitis was correlated with parameters of disease activity by Spearman's correlation coefficient.

Results: The mean age of patients was 14.3 ± 3.2 years with mean duration of disease 34.6 ± 4.9 months. Male: Female ratio was 7.5:1. Clinical enthesitis was seen in 36 of the 51 patients (70.5%) while US detected enthesitis in all ($p < 0.0001$). The mean JADAS score, BASDAI and BASFI were 17.1 ± 10.2 , 4.1 ± 2.4 and 37.2 ± 27.2 respectively, indicating active disease. The US enthesitis score correlated positively with JADAS ($r = 0.3$, $P = 0.03$), BASDAI ($r = 0.39$, $P = 0.005$) and BASFI ($r = 0.38$, $P = 0.006$). PD score correlated positively with BASFI ($r = 0.33$, $P = 0.02$), but did not correlate with JADAS ($r = 0.22$, $P = 0.1$), BASDAI ($r = 0.24$, $P = 0.08$).

Conclusion: Ultrasound is more sensitive in detecting enthesitis in JIA-ERA than clinical assessment. The US enthesitis score correlated positively with disease activity which has implications for treatment.

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FRI0581 COMPARISON OF CLINICAL CHARACTERISTIC IN ADULTS AND CHILDREN WITH GOUT

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Background: The incidence of gout in China is increasing in adults as well as children. The clinical manifestations of juvenile gout are not well described due to the limited number of cases in the past. Delineating the features of adult and juvenile gout may help pediatric providers recognize gout more effectively.

Objectives: We aim to describe and compare the clinical characteristic of adults and children with gout.

Methods: A total of 51 juvenile gout patients (age ≤ 18 years) and 337 adult gout patients in our hospital from Jan 2016 to Dec 2018 were enrolled in the study. Clinical parameters and laboratory data of the 2 groups were analyzed.

Results: The average age of onset in children with gout was 15.0 ± 1.9 years and the youngest patient was 8 years old. Compared to the adult group, juvenile gout patients displayed lower BMI (23.0 ± 3.8 vs. 25.6 ± 3.5 kg/m², $P < 0.001$) but higher serum uric acid levels (9.98 ± 2.65 vs. 8.09 ± 2.47 mg/dL, $P < 0.001$). Interestingly, systemic inflammation was less prominent in children compared to adult as illustrated by lower C-reactive protein levels (7.1 ± 13.5 vs. 23.7 ± 40.7 mg/L, $P = 0.004$) and lower erythrocyte sedimentation rate (12.7 ± 12.9 vs. 33.1 ± 34.2 mm/hr, $P < 0.001$). Renal function impairment was rare in children compared to adults (serum creatinine 98.73 ± 19.04 vs 120.38 ± 34.58 μ mol/L, $P < 0.001$). In terms joint manifestations, juvenile gout was associated with greater finger joint involvement (23.53% vs. 6.82% , $P < 0.001$) and less knee involvement (11.76% vs. 41.84% , $P < 0.001$) compared to adults. Ankle involvement was slightly more common in the pediatric group (49.02% vs. 30.56% in adults, $P = 0.009$) while MTP was similarly affected (50.98% vs. 32.94% , $P = 0.012$). In addition, tophi was found in four cases (7.8%) in the juvenile group compared to 113 cases in adults (33.5%), suggesting that although less common, advanced features of gout can also occur in children.

Conclusion: Juvenile gout is associated with higher serum uric acid levels and greater involvement of finger joints. Correlations with BMI and systemic inflammation were less prominent compared to gout in adults. These findings will help clinicians better recognize gout in children.

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Other orphan diseases

FRI0582 NON-INFECTIOUS UVEITIS AS A MANIFESTATION OF THE IMMUNE RECONSTITUTION INFLAMMATORY SYNDROME IN PATIENTS INFECTED BY HIV

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Background: Immune reconstitution inflammatory syndrome (IRIS) is a paradoxical clinical worsening of an already known condition or the new onset of an inflammatory manifestation that is presumably related with the immune reconstitution after starting highly active anti-retroviral therapy (HAART) in patients infected by the human immunodeficiency virus (HIV). **Objectives:** The aim of this study is to describe the clinical characteristics, presentation and response to immunosuppressive treatment in patients with uveitis secondary to ocular IRIS in our cohort of patients infected by HIV.

Methods: Retrospective review of clinical charts of patients diagnosed with HIV and non-infectious uveitis. Data collected included: demographics, anatomic classification of the uveitis, phenotypic diagnosis of the uveitis, other systemic immune-mediated disorders (IMD), time from HIV diagnosis to uveitis, CD4 count, viral load, treatment and complications of treatment and time of follow-up.

Results: Nine-teen patients (17 males) were included in the study. The mean age at the time of HIV diagnosis was 35.4 ± 9.6 years. The time lag between HIV diagnosis and the onset of uveitis was 9 ± 8.9 years. Mean CD4 count was 649 ± 292 cells/ml, while the viral load was undetectable in 13 out of 17 cases. In 2 patients, there were a worsening of a previous IMD and in 6 patients another IMD was diagnosed prior to or concurring with the uveitis diagnosis (3 cases of reactive arthritis). The most common anatomic classification of the uveitis was anterior (13 cases). The use of immunosuppressive therapies to control either the ocular syndrome or the additional IMD was necessary in 6 patients (including biologics in 4 cases) during the follow-up. Only one patient had a complication of the immunosuppressive treatment. The mean follow-up was 43.8 months (range: 0.6 - 115.7).

Conclusion: Non-infectious uveitis could be the first manifestation of immune-mediated systemic disease in patients with well-controlled HIV infection. Immunosuppression appeared to be a safe therapeutic option in our cohort of patients.

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