elevated. Slit lamp examination and angiotenzin converting enzym have excluded possibile diagnosis of sarcoidosis. Abdominal ultrasound and echocardiography were normal. After the treatment with non-steroid anti-inflammatory drugs (NSAIDs) fever has gone, but elevated inflammatory markers persisted with profound feeling of fatigue, weakness, and dizziness. Physical examination has revealed less palpabile right radial pulse and higher blood pressure on the same side. F-fluorodeoxyglucose positron emission tomography (PET-CT) have confirmed diagnosis of Takayasu arteritis of thoracic and abdominal aorta. Magnetic resonance angiography (MRA) of the brain was normal. Methyl-prednisolon pulses were induced with gradually steroid tappering and metotrexate treatment, but unfortunately this could not stopped inflammation. Six months later she was steroid dependent with chronic fatigue and persistently elevated inflammatory parameters. MRA of the heart and large blood vessels have revealed evidence of still active inflammation in the thoracic aorta. Decision was made and tocilizumab was added on regular basis treatment. Four months after inducing tocilizumab she was without any symptoms with normalized inflammatory markers and steroids could be tapered and stopped.
**Conclusion:** In the cases of the fever of unknown origin we should consider Takayasu arteritis, even though it is rarely seen in childhood. Early diagnosis and treatment could prevent serious systemic complications. Although we lack treatment algorithm recommendations in children, this is the evidence that early and aggressive inducing of tocilizumab could lead to sustained remission in Takayasu artertitis in children. Informed consent to publish had been obtained.

**Disclosure of Interest**
None Declared

## P052

### AUDITORY EVOKED POTENTIALS AND VISUAL EVOKED POTENTIALS: A HELPFUL TEST IN THE DIAGNOSIS AND FOLLOW UP OF KAWASAKI DISEASE

Maria Cristina Maggio[1], Giuseppe Salvo[1], Rolando Cimaz[2], Domenico Puma[3], Crocifissa Maria Ministeri[4], Giovanni Corsello[1]
[1]University Department Pro.Sa.M.I. "G. D'Alessandro", University of Palermo, Palermo; [2]NEUROFARBA Department University of Florence, and AOU Meyer, University of Florence, Florence; [3]Paediatric Neuropsychiatry Operative Unit, Children Hospital "G. Di Cristina"; [4]O.U.of Neurophysiopathology, ARNAS, Palermo, Palermo, Italy
**Correspondence:** Maria Cristina Maggio
*Pediatric Rheumatology* 2018, **16(Suppl 2):**P052

**Introduction:** Kawasaki disease is a systemic vasculitis affecting mainly children; the most serious complications are coronary artery lesions (CAL). Nonetheless, the spectrum of complications involves all the vascular districts, such as the eyes, skin, kidneys, gallbladder, liver, central nervous system. Sensorineural hearing loss is a low diagnosed complication of KD, however, it may be permanent.
**Objectives:** Auditory evoked potentials (ABR) and visual evoked potentials (VEPs) are useful in evaluating children without auditory and/or visual symptoms but with diseases that could sub clinically involve these functions.
**Methods:** We enrolled 52 children (31 M, 21 F; age: 3 months-10 years) with KD and evaluated ABR and VEPs in the acute phase of the disease and during the follow up. We correlated the neurophysiological study with clinical, biochemical parameters, the type of KD (typical, atypical, incomplete) with cardiac involvement and time of IVIG and/or other non-conventional treatment in the acute phase of KD.
**Results:** VEPs were pathological in 6 children (4 M; 2 F) (1 patient with CAL had monoliteral alterations; 2 patients had ABR pathological as well). ABR were pathological in 36/52 patients (69%) (2 patients without CAL had monoliteral alterations). Furthermore, in those patients (31M; 21 F) there were no significant differences in age, time of the diagnosis, time of the first dose of IVIG, biochemical parameters (leukocytes, neutrophils percentage, AST, ALT, gamma-GT, albumin, Na, fibrinogen, D-Dimer) vs KD patients without alterations of ABR and VEPs.
One patient showed a persistent sensorineural auditory loss.
During the follow up, ABR and/or VEPs alterations persisted in the 80% of the patients.
Most of the patients showed alterations of the wave V and the I-V, expression of mesencephalic involvement.
**Conclusion:** We suggest evaluating ABR and VEPs in patients with KD, both in patients with precocious diagnosis and treatment either in children treated later than 10 days with IVIG.
We suggest studying also patients without CAL, in whom neurophysiological study may contribute to the complete follow up of these patients.

**Disclosure of Interest**
None Declared

# Poster Walk 3: JIA basic

## P053

### ASSOCIATION OF INCREASED SUN EXPOSURE OVER THE LIFE-COURSE WITH A REDUCED RISK OF JUVENILE IDIOPATHIC ARTHRITIS

Justine A. Ellis[1], Rachel Chiaroni-Clarke[1], Jane Munro[2,3], Angela Pezic[4], Joanna Cobb[1], Jonathan Akikusa[2,3], Roger Allen[2,3], Terence Dwyer[4,5], Anne-Louise Ponsonby[4]
[1]Genes, Environment & Complex Disease, Murdoch Children's Research Institute; [2]Paediatric Rheumatology, Royal Children's Hospital; [3]Arthritis & Rheumatology; [4]Environmental & Genetic Epidemiology Research, Murdoch Children's Research Institute, Parkville, Australia; [5]George Institute for Global Health, University of Oxford, Oxford, UK
**Correspondence:** Justine A. Ellis
*Pediatric Rheumatology* 2018, **16(Suppl 2):**P053

**Introduction:** Cutaneous sun exposure is an important determinant of circulating vitamin D. Both sun exposure and vitamin D have been inversely associated with risk of autoimmune disease, including multiple sclerosis and rheumatoid arthritis. In children with juvenile idiopathic arthritis (JIA), low circulating vitamin D is reportedly common, but disease-related behavioural changes may have influenced sun exposure behaviours (reverse causation).
**Objectives:** We aimed to determine whether sun exposure across the life-course prior to diagnosis is associated with JIA.
**Methods:** Using validated questionnaires, we retrospectively measured sun exposure for 202 Caucasian JIA case-control pairs born and living in Victoria Australia and recruited to the CLARITY JIA Biobank. Cases and controls were matched for year of birth and time of recruitment. All subtypes of JIA were included in the analysis. Measures included maternal sun exposure at 12 weeks of pregnancy, and child sun exposure across the life-course pre-diagnosis. We converted sun exposure to UVR dose using location-specific (Melbourne Australia, latitude 37.5°S) UVR data. We looked for case-control sun/UVR exposure differences at various ages pre-diagnosis, and cumulatively across the pre-diagnosis life-course, using logistic regression, adjusting for potential confounders.
**Results:** Higher cumulative child pre-diagnosis UVR exposure was associated with reduced risk of JIA (e.g. total UVR dose quartile 1 vs 4, adjusted odds ratio (AOR) 0.19, 95% CI 0.04 – 0.85, p = 0.030), with a clear dose response relationship (test for trend p=0.025). UVR exposure at 12 weeks of pregnancy was similarly inversely associated with JIA (e.g. UVR quartile 1 vs 4, AOR 0.32, 95% CI 0.13 – 0.80, p = 0.014) with evidence of a dose response (test for trend p=0.031). Associations were robust to sensitivity analyses for disease duration, and for pre-diagnosis behavioural changes and knowledge of the hypothesis as collected by parent questionnaire.
**Conclusion:** Increased UVR exposure across the pre-diagnosis life-course is associated with reduced risk of JIA in our setting. This suggests lower circulating vitamin D in JIA may be causative, but prospective studies that directly measure pre-disease vitamin D in JIA are required. If confirmed, the associations point to an environmental factor amenable to intervention that may reduce risk of JIA in the population.

**Disclosure of Interest**
None Declared