## 876 Efficacy of Montelukast for Treatment of Periodic Fever with Aphthous Stomatitis, Pharyngitis and Cervical Adenitis Syndrome (PFAPA)

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**RATIONALE:** PFAPA is a periodic fever syndrome of unknown etiology, with autoinflammatory characteristics. Treatment with a single dose of oral corticosteroid (OCS) at the onset of fever effectively aborts the febrile episode, but repeated treatment with OCS often results in more frequent fever cycles. Anecdotally, some children with PFAPA improve with montelukast treatment, but nothing has been published on this topic.

**METHODS:** A survey was posted to an internet discussion group devoted to PFAPA. Parents whose children had a diagnosis of PFAPA and had been treated with montelukast were asked to complete and return the survey.

**RESULTS:** Nine parents responded to the survey. Six of 9 subjects were boys; age at onset ranged from 1 month to 10.5 years. Baseline means: fever duration: 4.6 days; fever free interval: 16.4 days; maximal temperature: 39.4°C. Associated symptoms: pharyngitis 100%, cervical lymphadenitis 67%, aphthous stomatitis 67%, GI symptoms 33%, myalgias 22%, arthralgias 22%. Eight subjects had rapid resolution of fever and symptoms with OCS treatment; seven subjects had more frequent fevers after using OCS. Six subjects had significantly longer fever free intervals with montelukast treatment (2 to 12-fold increase). Two of these subjects had not had a fever since starting montelukast, 6 and 8 weeks prior to the survey. No significant adverse effects were reported.

**CONCLUSIONS:** Treatment with montelukast has been empirically found to reduce the frequency of fever cycles in some patients with PFAPA. Elucidation of the mechanism of action might shed light on the pathogenesis of this poorly understood syndrome.

## 877 Elevated Serum IgE Concentrations In Systemic Lupus Erythematosus are Related to History of Childhood Allergy, Asthma, and Hives

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**RATIONALE:** Elevated serum IgE concentrations have sometimes been found in systemic lupus erythematosus (SLE) patients. Reasons for these findings and associations with clinical and autoantibody phenotype remain controversial.

**METHODS:** Sera were obtained from 121 recently diagnosed SLE patients (American College of Rheumatology classification) and 114 population controls. ANAs (SS/A, SS/B, Sm, RNP, Jo-1, Scl-70, dsDNA, Centromere B, and Histone) were measured using a multiplexed ANA screen (AtheNA, Inverness). Total serum IgE was measured using an Immulite 2000 (Siemens). ANA results above 120 IU/ml and total IgE results above 100 IU/ml were considered positive.

**RESULTS:** Mean total IgE was non-significantly elevated in patients (mean = 245 IU/ml, 95% Confidence Limits (CL) 94-396) compared with controls (89 IU/ml, 95% CL 61-117), and 30% of SLE patients were considered IgE positive compared with 22% of controls. Being IgE positive was not clearly related to prevalence of ANAs or specific SLE clinical features in medical records, or with report of currently active disease or measured C-reactive protein levels. Positive IgE was, however, significantly more common in patients with self-reported history of childhood onset asthma, hay fever or eczema ($p = 0.029$), or ever having hives ($p = 0.043$), with these independent associations persisting in race-adjusted multivariate models.

**CONCLUSIONS:** These findings suggest elevated total IgE levels in cases may be related to history of allergic disease, but are not specifically related to SLE-specific ANAs, clinical features, or activity. Further studies should investigate whether shared risk factors could account for elevated IgE levels in SLE patients with history of allergic disease.

## 878 Paradoxical Response to IVIG in a Patient with Autoimmune Hepatitis and Idiopathic Cytopenias

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**RATIONALE:** Intravenous immunoglobulin (IVIG) is a first-line treatment for immune thrombocytopenic purpura (ITP) and other immune cytopenias that results in rapid recovery of cell counts, presumably via Fc receptor blockade. We report a patient with autoimmune hepatitis (AIH), thrombocytopenia and neutropenia who developed transient but severe leukopenia following administration of IVIG.

**METHODS:** 12-year-old female with a history of AIH admitted with worsening liver function, leukopenia (WBC 890/ul, ANC 500/ul) and a depressed platelet count (39,000/ul). Anti-neutrophil antibodies were negative. Coombs test was mildly positive. Liver biopsy was consistent with cirrhosis. Bone marrow biopsy was unremarkable.

**RESULTS:** Treatment with high dose intravenous glucocorticoids resulted in a modest increase in the ANC and platelet count. The patient was then given IVIG (2 g/kg) over 48 hours. Immediately following IVIG administration there was a marked decrease in the neutrophil count (from 1400/ul to 300/ul). Platelet count went from 57,000/ul to 46,000/ul. ANC returned to pre-IVIG levels by day 3 with a subsequent increase noted at day 11 (ANC 1070/ul) post-IVIG. Platelet count remained unchanged.

**CONCLUSIONS:** IVIG-induced neutropenia has been described in association with ITP but not with AIH. Proposed mechanisms for this transient effect of IVIG include: neutrophil cytoxicity mediated by anti-FcR antibodies; increased neutrophil apoptosis induced by anti-CD95 or anti-Siglec-9 antibodies; and increased neutrophil adhesion to the vascular endothelium mediated by anti-CD11b antibodies. This case report draws attention to a rare and paradoxical effect of IVIG, especially when used in the therapy of immune cytopenias.

## 879 Successful Experience with Adalimumab in a patient with the Hyperimmunoglobulinemia D and Periodic Fever Syndrome

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**RATIONALE:** The Hyperimmunoglobulinemia D and Periodic Fever Syndrome (HIDS) is caused by recessive mutations in the mevalonate kinase gene, which encodes an enzyme involved in cholesterol and nonsterol isoprenoid biosynthesis. HIDS is typified by recurrent febrile attacks with abdominal pain, joint involvement, headache, skin lesions and elevated serum IgD level. Elevation of several cytokines including tumor necrosis factor-alpha have been described during attacks. There have been few reports of the patients with HIDS responding to Etanercept. We report the first case of HIDS who has responded very well to Adalimumab, the anti-TNF-α which binds specifically to TNF-α and blocks its interaction between the p55 and p75 cell surface TNF receptors.

**METHODS:** We report a 36-year-old woman with periodic episodes of high-grade fever, rash, lymphadenopathy, addominal pain since the age of two, who has had elevated levels of serum IgD. The patient was initially treated with increasing dose of Methotrexate then the combination of Anakinra and Methotrexate with partial improvement. The treatment was subsequently switched to the combination of Adalimumab and Methotrexate. Clinical response, ESR and IgD levels were recorded serially.

**RESULTS:** IgD levels and ESR were elevated initially. The patient was started on 40 mg of subcutaneous Adalimumab every two weeks along with 20 mg of Methotrexate weekly. Adalimumab remarkably reduces the severity and frequency of symptoms, IgD levels and ESR.

**CONCLUSIONS:** We report the first case of favorable response to Adalimumab in a patient with HIDS. Our findings support the role of TNF-α in HIDS and the excellent potential of anti-TNF-α therapy in HIDS.