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**Maintenance treatment in childhood granulomatosus with polyangiitis**

M. Twilt, R. Schneider, D. Hebert, E. Harvey, R. Laxer, S. Dell, C. Licht, S. Benseler

_The Hospital for Sick Children, Toronto, Canada_

**Introduction.**– Granulomatosus with polyangiitis (GPA) is a rare but potentially life or organ threatening disease. The majority of children present with pulmonary bleeds and/or renal failure. Most treatment regimens are derived from the adult literature, and no studies have been performed in pediatric patients. The aim of this study is to describe the outcome of maintenance treatments in a large group of children with GPA.

**Patients.**– All consecutive children diagnosed with GPA since January 2000 at the Hospital for Sick Children, Toronto, were included. Demographic data, and clinical and laboratory data at diagnosis and follow-up were collected. Descriptive statistics were used for these preliminary results.

**Results.**– Thirty-two children were included; 21 girls and 11 boys, median age of 13.7 years at diagnosis. Anti-neutrophil cytoplasmic antibody (ANCA) was positive in 30 children [26 c-ANCA with 25 anti-proteinase-3 (anti-PR3), four p-ANCA with four anti Myeloperoxidase (anti-MPO)] and two were ANCA negative (one anti-PR3 positive). Eight children had limited disease and 24 systemic diseases. Induction therapy in the systemic patients consisted of pulses of cyclophosphamide i.v. (mean 7 pulses) and methyprednisone (mean 5 pulses) i.v., six children received plasmapheresis. Maintenance treatment in this group consisted of methotrexate (MTX) in seven, azathioprine (AZA) in 14, and mycophenolate mofetil (MMF) in three children.

In the limited disease group, treatment consisted of oral prednisone in all, MTX in seven children and AZA in one as initial treatment. Relapses were seen in 14 children. Fifty percent of relapses (n = 7) were within the first 12 months of disease. Of the 14 patients, two children with limited disease relapsed, both while still on MTX. Eleven children with systemic disease relapsed on treatment; four on MTX, five on AZA and two on MMF.

**Conclusion.**– Relapses are frequent (22% in first year of treatment) in childhood GPA despite induction and maintenance treatment. Relapses are higher in children with systemic GPA (50%) compared to limited GPA (25%).

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**GPA and MPA patients have different serum cytokine profiles**

A. Avik1, Y. Sundstrom2, L. Berg2, A. Bruchfeld1, V. Malmstrom2, L. Gunnarsson1

1. Karolinska University Hospital, Stockholm, Sweden
2. Karolinska Institute, Stockholm, Sweden

**Introduction.**– The ANCA associated vasculitis (AAV) subsets – granulomatosus with polyangiitis (GPA), microscopic polyangiitis (MPA) are often regarded and treated as one diagnostic group, but recent genetic data demonstrate that they are not. Here we studied GPA and MPA serum comparing a set of cytokines implicated in AAV.

**Patients.**– Peripheral blood were collected from 39 active AAV patients at baseline and following 6 months of therapy. Thirteen age- and sex-matched healthy individuals were used as controls.

Twenty-six out of thirty-nine patients had a GPA diagnosis (24 PR3+/2 MPO+) and 13 had MPA (all MPO+). Disease activity was estimated by Birmingham Vasculitis Activity Score 2003 (BVAS) and CRP. Serum samples was analyzed for the presence of IL-6, IL-8, IL-10 and IL-17A by cytometric bead array.

**Results.**– The AAV patients displayed significantly elevated levels of IL-6 and IL-10 as compared to age-matched healthy controls but not of IL-8 and IL-17A.

Next, the samples were subgrouped according to diagnosis and autoantibody profile. The GPA group had higher baseline of both IL-6 and IL-17 than MPA, although only few patients had detectable IL-17 (all GPA, 6PR3/1MPO). In the GPA samples, but not in MPA, the levels of IL-6, -8 and -17 decreased significantly at follow-up, and IL-10 showed a trend towards decrease. These differences were even more pronounced when comparing PR3+ vs. MPO+.

**Conclusion.**– GPA and MPA have overlapping disease manifestations and are treated similarly. Still, recent data suggest that the genetic make-up is distinct between the two. Hence the underlying immune responses could have different causes.

In contrast to recent publications, our data does not support the notion of IL-17 being generally increased in AAV patients. Instead we found that GPA/PR3 patients down regulated the studied cytokines after initiated therapy much more robustly than MPA/MPO. These data indicate that GPA and MPA, or actually PR3+ and MPO+, could be immunologically distinct and hence require differences in treatment approach.

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**A case of lung biopsy-proven MPO-ANCA positive granulomatosus with polyangiitis (GPA; Wegener’s granulomatosis)**


1. Kyorin University Hospital, Department of Rheumatology and Collagenosis, Tokyo, Japan
2. Kyorin University Hospital, Department of Respiratory Medicine, Tokyo, Japan
3. Kyorin University Hospital, Department of Respiratory Surgery, Tokyo, Japan
4. Kyorin University Hospital, Department of Pathology, Tokyo, Japan

**Introduction.**– We report a rare case of MPO-ANCA positive GPA with typical pathological findings in the lung nodule which was obtained by open biopsy. We also discuss the characteristic of MPO-ANCA positive GPA often seen in Asian countries, with other cases we have experienced in our hospital.

**Patients.**– A 61-year-old man suffered from intractable secretory otitis media in his right ear in March 2012. Two months later, he complained of general fatigue and body weight loss. Five month later he suffered from scleritis and intermittent fever, then he visited a doctor in November 2012. Mass lesions were found in his both lungs by chest radiography and positron emission tomography-computed tomography (PET-CT).

He was referred to the department of respiratory medicine of our hospital. The CT revealed mass shadow in both lungs and sinusitis. Open lung biopsy was performed. The specimen, obtained from the left lower lobe, showed granuloma with multinucleated giant cells and...