or probable IE, and 31 (28%) had prosthetic valves. The major causative pathogens were *Staphylococcus aureus* (*n* = 33), *Streptococcus viridans* (*n* = 23), *Streptococcus bovis* (*n* = 10) and *Enterococci* (*n* = 7). C-ANCA were found in 13 patients (12%), P-ANCA in 11 (10%) and 1 case (1%) showed both patterns. ELISA revealed anti-PR3 in four cases (3%) and anti-MPO in four (3%), some with very high titters. The eight anti-PR3/anti-MPO–positive IE cases involved various pathogens and both native and prosthetic valves. Testing for ANAs (titer > 1:160), acl and RF was positive in 17 (16%), 25 (23%) and 38 (35%), respectively.

**Conclusion.** – This study suggests that ANCA, including those with anti-PR3 or anti-MPO specificities, occur in a significant subset of cases and substantiate the consideration of IE as a potential cause of ANCA positivity.

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**A30**

**Recurrent acquired ANCA-positive agranulocytosis after cocaine exposure: A chronic disease?**

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**Introduction.** – Levamisole tainted cocaine may lead to skin necrotizing vasculitis with neutropenia, but also to life-threatening agranulocytosis, often occurring with ANCA positivity. While in vasculopathy-associated cases neutropenia resolves with drug withdrawal, little is known about the clinical course of isolated agranulocytosis. Levamisole is thought to cause neutropenia inducing autoimmunity. We describe three of recurrent, chronic, ANCA-positive agranulocytosis, with no vasculitic symptoms, after cocaine exposure.

**Methods.** – Anti-MPO, anti-PR3 and anti-NE ANCA were detected by direct immunofluorescence and anti-c-myc and nickel ELISAs.

**Results.** – Three pts (1 M/2 F, 36, 41, 45 y.o., respectively) without family history of neutropenia, developed recurrent episodes of agranulocytosis associated to acute tonsillitis, oral mucositis, or perianal ulcers. All admitted cocaine use. Laboratory tests showed ANCA positivity, anti-MPO in one case and anti-PR3 in the other two. Before immunosuppressive therapy was started, a cyclical drop of neutrophil count was observed in all pts, not regularly linked to further cocaine use. In one case high dose prednisone was administered for 2 months, with success. When this patient relapsed, azathioprine was given, obtaining a new remission. The other two cases achieved remission after three and two courses, respectively, of high dose Ig. Pts’ median follow-up was 22 months.

Looking for an immune mechanism possibly responsible for an early apoptosis of neutrophil precursors, we tested pts’ sera for neutrophil elastase (NE) ANCA, i.e. the antibody directed against the same protein mutated in the congenital form. We found a significant titer of HNE elastase (NE) ANCA, i.e. the antibody directed against the same protein involved in apoptosis of neutrophil precursors, we tested pts’ sera for neutrophil elastase (NE) ANCA, i.e. the antibody directed against the same protein mutated in the congenital form. We found a significant titer of HNE elastase (NE) ANCA, i.e. the antibody directed against the same protein involved in apoptosis of neutrophil precursors.

**Conclusion.** – Our findings support a relation between cyclic acquired neutropenia and NE ANCA, likely induced by exposure to cocaine, that would trigger an immuno-mediated process leading to a chronic disease. Drug abstinence may not be enough to prevent neutropenia, and treatment in these cases should be immunosuppressive therapy.

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Introduction. This study describes characteristics and outcomes of AAV patients included in a nationwide initiative collecting clinical and laboratory data on AAV since 2009.

Methods. Sixteen vasculitis centres (9 Nephrology, 4 Rheumatology, 2 Immunology, 1 Pediatrics) have participated in web-based data collection, consisting of retrospective data supplied at entry and prospective follow-up with a visit recorded every 3–6 months. Statistical analysis included the Kaplan-Meier method and log-rank test for survival analysis.

Results. A total of 569 patients (M/F 276/293, median age at diagnosis 58, range 12–88 years) were enrolled, 311 (55%) c/PR3-ANCA positive, 226 p/MPO-ANCA (40%) and 16 (3%) ANCA-negative. The mean time from diagnosis was 67 months (range 0–463). GPA was the most common diagnosis with 59%, followed by MPA (including renal-limited form) recorded in 35% and CSS in 4%. Cumulative organ involvement included kidney in 89% (confirmed with renal biopsy in 75% of them), lungs in 61% and EN1 in 39%. The estimated 5-year survival was higher in patients aged ≤ 65 years than in the older ones (85.3% vs. 67.2%, P < 0.001), in c/PR3-ANCA positive patients compared to p/MPO-ANCA (85.7% vs. 72.5%, P = 0.002) and in patients without severe renal vasculitis at diagnosis compared to those with S-creatinine > 500 μmol/L (86.5% vs. 66.8%, P < 0.001). Last available Vasculitis Damage Index (VDI) ranged between 0 and 16 (median 4). c/PR3-ANCA-positive patients were diagnosed younger (mean 52 vs. 60 years, P < 0.01), with better S-creatinine levels (mean 183 vs 257 μmol/L, P < 0.01) and suffered from more relapses during follow-up (1.23 vs. 0.7/person, 47% vs. 34% with a relapse, P < 0.01) compared to p/MPO-ANCA positive.

Conclusion. In the Czech population, GPA is the most common AAV, reflecting the northern European type. Older age and severe renal involvement are associated with higher mortality. Long-term survival is associated with relatively frequent relapses and significant morbidity in a number of patients.

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A34 Infection risk in ANCA-associated vasculitis

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Introduction. Infection is a frequent complication in anti-neutrophil cytoplasm antibody-associated vasculitis and is associated with increased morbidity and mortality. We investigated infection rates, infection risk factors and vaccine responses in a cohort of patients under long-term follow.

Patients. Clinical data was collected retrospectively from patient records. Patients received intravenous 7. Men A,C,W135,Y and meningococcus vaccines. Functional antibody titres were measured at baseline, 4 and 16 weeks and 2 years; anti-pneumococcal antibody (anti-PN) opsonophagocytic assay (OPA) was done at 16 weeks. All participants gave informed consent.

Results. In 89 patients with median 5 (2–22) years follow-up overall rates were 1.5 infections/year and 0.9 infections requiring hospital admission/year. Serum immunoglobulin G (IgG) < 5 g/L was associated with infection. Ninety-two patients in established remission received vaccination with 16 weeks follow-up. Sixty-four patients were followed for 2 years. IgG < 6 g/L at vaccination was associated with low baseline anti-pneumococcal antibodies (anti-PN), CD19 B cell counts and CD4 T cell counts, increased age and continued immunosuppression. Functional antibody titres improved significantly from baseline following vaccination in most patients. Factors associated with poor responses (antibody titre post-vaccination < 0.35 u/mL for pneumococcus, < 0.1 u/mL for meningococcus and haemophilus) were baseline IgG < 6 g/L (P = 0.017) and continued immunosuppression. Patients who achieved anti-PN titres > 0.35 by 16 weeks generally persisted at 2 years (57–100% of patients). OPA showed a significant positive correlation with most anti-PN antibody titres tested. No increase in relapse was seen post-vaccination.

Discussion. Patients with secondary immunodeficiency are at high-risk of infection and do not mount adequate vaccine responses. Strategies...