Immune-mediated Neutropenia in the Dog - by Darren Fry

Immune-mediated neutropenia is an uncommon but possibly under-reported condition in the dog. Concurrent immune mediated thrombocytopenia or anemia may occur and neutrophil destruction may be peripheral or within the bone marrow. Only a handful of cases have been described in the veterinary literature. The most recent (and largest) case series was published by Perkins et al in the Australian Veterinary Journal in 2004. In this paper, 5 cases were described. There does not appear to be an age, sex or breed disposition. Affected dogs present with a persistent and profound neutropenia with or without clinical signs of sepsis, fever or shock.

There are no specific anti-neutrophil antibody tests available in the dog and diagnosis requires a thorough work up to rule out other, more common causes of neutropenia such as infectious and inflammatory disease, neoplasia and drug-associated neutropenia. Underlying neoplasia should also be excluded. Given the relative rarity of the condition and the need to immunosuppress an already neutropenic animal, bone marrow cytology is strongly advisable as part of the work up.

Treatment is similar to that of other immune-mediated cytopenias and involves the use of immunosuppressive drugs together with initial antibiotic cover. Often, a prompt response to immunosuppressive doses of corticosteroids is seen. Four of the five dogs in Perkins' study showed a clinical improvement within 48 hours and regained a normal neutrophil count within 10 days. Due to the small numbers of cases reported, the optimum treatment regime for this condition has not yet been established. However, prednisone at an immunosuppressive dose with or without azathioprine is the usual initial choice of therapy. Cyclosporine may play a role and was certainly beneficial in Rupert's case. Cyclosporine offers the potential for treatment without many of the side effects of steroid therapy and the potential myelosuppressive effects of azathioprine. However at this stage, it remains an unproven and relatively expensive alternative.

Overall, the prognosis for dogs with immune-mediated neutropenia appears to be good from the limited numbers of cases reported. Approximately half of the affected animals seem to require long-term immunosuppressive therapy. As with other immune mediated cytopenias, several months of therapy are required and it appears to be very important not to abruptly withdraw therapy, as a second remission may be very difficult to achieve.