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CLINICAL CASE

Three cases of feline hypereosinophilic syndrome treated with imatinib mesilate☆

Trois cas de syndrome hyperéosinophilique félin traités avec de l'imatinib mésylate

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Summary A hypereosinophilic syndrome was diagnosed in three cats with refractory dermatitis and marked hypereosinophilia. The cats were treated with imatinib mesylate, a tyrosine-kinase inhibitor at the oral dose of 5 mg per cat. In all three cases, a dramatic improvement was rapidly observed.

☆ Crédits de formation continue. — La lecture de cet article ouvre droit à 0,05 CFC. La déclaration de lecture, individuelle et volontaire, est à effectuer auprès du CNVFCC (cf. sommaire).

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MOTS CLÉS
Chat ;
Syndrome hyperéosinophilique ;
Dermatite éosinophilique ;
Imatinib mesilate ;
inhibiteur des tyrosine-kinases

Résumé Un syndrome hyperéosinophilique est diagnostiqué chez 3 chats présentant une dermatite éosinophilique réfractaire à tout traitement et une hyperéosinophilie marquée. Les chats sont traités avec de l'imatinib dosée à 5 mg. Dans les trois cas, une amélioration spectaculaire est observée.

Introduction

Imatinib is an oral chemotherapeutic agent that selectively inhibits the protein tyrosine-kinases Bcr-Abl, Kit and PDGFR (platelet-derived growth factor receptor) involved in oncogenesis. It has demonstrated remarkable clinical efficacy in human patients with chronic myeloid leukemia, malignant gastrointestinal stromal tumours, chronic eosinophilic leukemia and the hypereosinophilic syndrome (HES) [1,2]. It is currently marketed in several countries worldwide as its mesylate salt, imatinib mesylate (Gleevec or Glivec, Novartis, Switzerland).

In veterinary medicine, imatinib is currently not registered for the treatment of animal diseases. It has however been used off-label for the treatment of canine and feline mast cell tumors as well as feline fibrosarcoma and squamous cell carcinoma [3,4]. The authors report here three cases of feline hypereosinophilic syndrome dramatically improved with imatinib mesylate. To our knowledge, the use of this drug for the treatment of feline HES has never been previously reported.

Case reports

Case 1

A 6-year-old neutered male domestic shorthaired cat was referred to severe pruritic eosinophilic dermatitis of more than 5-year duration associated, since 2 months, with, inspire of treatment with steroids, worsening cutaneous and oral lesions, ptyalism, painful food prehension, weight loss and lethargy. The initial lesions were a linear granuloma located on the pelvic limbs and an eosinophilic plaque located on the inner thigh. A limited antigen diet trial (DR21 Royal Canin), flea control (fipronil + (S)-methoprene spot on, every month), antibiotic therapy (cefalexin, 20 mg/kg/BID), oral ciclosporin (7 mg/kg/day) and oral chlorambucil (2 mg/kg every three days) were of no benefit. Oral and injectable glucocorticosteroid therapy (prednisolone at 2 mg/kg/day, dexamethasone at 0.2 mg/kg/day, methylprednisolone acetate at 20 mg/month) had only led to a partial improvement during a few years. But two months prior to presentation, a severe deterioration was observed in spite of an injection of 20 mg methylprednisolone acetate and a prescription of dexamethasone at 0.2 mg/kg/day.

On physical examination at the time of referral, the cat had lost over than 1 kg, (weight 4 kg) and was lethargic.

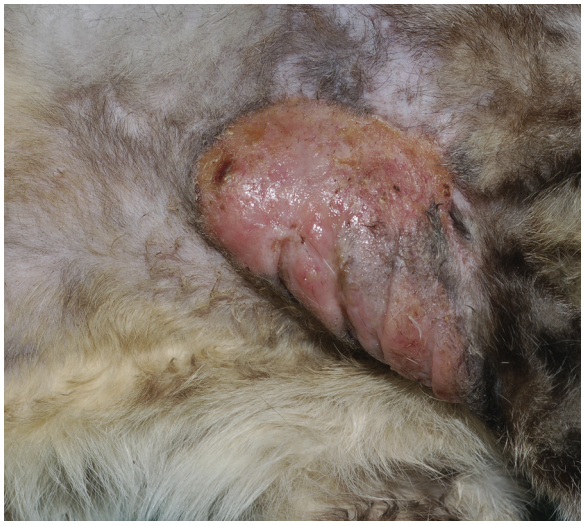

Figure 1. Clinical case 1: very large budding eroded oozing plaque on the right elbow.

The submandibular, retropharyngeal and prescapular lymph nodes were enlarged. Several cutaneous lesions were noted: a very large eroded oozing plaque with a central fistula located on the right elbow (Fig. 1), an eroded plaque on the left thoracic limb and an ulcer on the upper lips. The hard palate was painful, erythematous, eroded and punctuated by numerous white granulomas (Fig. 2). The other physical parameters were within normal limits.

A complete blood count revealed an increased eosinophil count (4.77×10^9/L, reference range $0.05-1.10 \times 10^9$/L). On peripheral blood smear, mature eosinophilia was noted. The serum biochemical parameters were within normal limits. Serological and polymerase chain reaction tests were negative for feline leukaemia virus (FeLV), feline immunodeficiency virus (FIV), feline herpesvirus type 1 (FHV1) and calicivirus. Faecal floating examination was negative for intestinal parasites. Cytological examination of all mucosal and cutaneous lesions revealed the eosinophilic nature of the inflammation. Histopathological examination of the skin over the elbow revealed necrosis of the epidermis substituted by a necrotic coagulum, fragmented collagen fibers, eosinophilic dusting, picnotic cells (eosinophils?), the epidermic base is neovascularized and interspersed with inflammatory cells (mainly eosinophilic).

Based on the findings, HES was diagnosed. Treatment was initiated with oral imatinib mesylate at a dose of 1.25 mg/kg