Flea allergic dermatitis

Rostaher, A

Feline fleabite hypersensitivity

Fleabite hypersensitivity is considered the most common feline hypersensitivity disease in flea-endemic areas. The most prevalent flea in the cat is the Ctenocephalides felis. Not much is known about the pathogenesis. Both, type I and type IV hypersensitivity reactions to the flea salivary antigen have been showed. Additionally, allergen-specific IgE to the flea antigens has been demonstrated. There is no sex or breed predilection and cats can develop flea allergy at any age. Possible lesions include military dermatitis, alopecia, excessive grooming, head and neck pruritus and eosinophilic granuloma complex.

Differential diagnoses include other allergies, ectoparasitoses, pyoderma, dermatophytosis, autoimmune dermatoses and psychogenic alopecia. The diagnosis is based on the history (suboptimal flea control) and clinical signs. Evidence of fleas or flea feces is often not found, very likely to the excessive cat grooming behaviour. Intradermal and serology testing are positive and can be > 80% accurate. The response to rigid flea control (4-6 weeks) remains still the best diagnostic method.

Factors that are important in the flea control:

- Understanding the flea life cycle
- Most of the flea eggs are found where the pet is spending the most of its time
- Larvae migrate under furniture and carpeting (negative phototaxis)
- The pupal stage is difficult is very resistant to treatment, it is a reservoir of continuous emergence of fleas
- Explain to the owner that it takes time and rigour to control the flea population and consequently the clinical signs

In addition to the adulticides (selemectin, fipronil, imidacloprid, nintenpyram, spinosad), environmental control must be instituted to prevent flea eggs from hatching and larvae from pupating (insects growth regulators methoprene, pyriproxyfen or insect development inhibitor lufenuron). In cats with severe pruritus glucocorticoids should be used initially. Antihistamines can be tried, but seem to be less effective.

Understanding the cat flea life cycle

The entire life cycle takes around 4 weeks (goes from 2 weeks to 6 months). Female fleas produce around 30 eggs/day (> 2000 in the entire life), which fall of the host. Eggs usually hatch into larvae within 10 days but may also stay dormant for 1-4 months. There are three larval stages, which feed on the flea feces or organic debris and last for approximately 5 to 11 days. Larvae and eggs do not survive freezing. The larvae then metamorphose into the pupa, which in ideal conditions (heat, vibrations, exhaled CO2) develop into the adult flea within 10 days. The pupa stage is very resistant to environmental conditions and then can survive around 6 months.

FLEA IDENTITY CARD			
Fleas love	**Fleas hate**	**Flea eating habits**	**Flea reproduction habits**
Darkness	Direct sunlight	Feed for ca. 1 h, just after jumping on the host	Start laying eggs within 24h after feeding
Moisture > 50%	Desiccation	Eat 15 x their body weight / day (13 µl blood)	Lay around 30 egg/day and 2000/life
Warmth 10-30°C	Cold Survive 5 d at 1°C	Survive without meal up to 2 months	Life cycle egg to adult is 3-8w (up to 6m)

Belova, S, Wilhelm S et al. Factors affecting allergen-specific IgE serum levels in cats. Can J Vet Res. 2012; 76(1): 45-51.

Cadiergues MC. Flea control in flea allergic dogs and cats. EJCAP. 2009; 19: 261-267.

Dryden MW. Flea and tick control in the 21st century: challenges and opportunities. Vet Dermatol. 2009; 20(5-6): 435-40.

Hobi S, Linek M, Marignac G, Olivry T, Beco L, Nett C, Fontaine J, Roosje P, Bergvall K, Belova S, Koebrich S, Pin D, Kovalik M, Meury S, Wilhelm S, Favrot C. Clinical characteristics and causes of pruritus in cats: a multicentre study on feline hypersensitivity-associated dermatoses. Vet Dermatol. 2011; 22(5): 406-13.

Noli C. Flea allergy in cats – clinical signs and diagnosis. EJCAP. 2009; 19: 249-253.

Paarlberg, T. E., S. Wiseman, et al. Safety and efficacy of spinosad chewable tablets for treatment of flea infestations of cats.J Am Vet Med Assoc. 2013; 242(8): 1092-8.

Snyder DE, Meyer KA et al. Speed of kill efficacy and efficacy of flavored spinosad tablets administered orally to cats in a simulated home environment for the treatment and prevention of cat flea (Ctenocephalides felis) infestations." Article in Press: Vet Parasitol. 2013; Mar 5. pii: S0304-4017(13)00135-0. doi: 10.1016/j.vetpar.2013.02.023.