Onset and speed of kill of a topical administration of a dinotefuran-pyriproxyfen (Vectra® Felis) combination against Ctenocephalides felis fleas on cats

Marie Varloud, Jeffrey Blair

Ceva Sante Animale, Libourne, France

INTRODUCTION

Fleas are common hematophagous parasites of companion animals including cats. Because the fleas feed quickly and frequently on a newly acquired host, it is important to kill these insects as fast as possible. This study assessed on cats the onset and speed of kill of a topical combination of dinotefuran-pyriproxyfen (Vectra® Felis, DP) against adult fleas (Ctenocephalides felis).

METHODS

This study was performed according the principles of Good Clinical Practices. The protocol was approved by an ethical committee. After at least 7 days of acclimatization and based on pre-treatment flea retention rates, 48 adult domestic cats

(1.97–5.72 kg BW) were allocated to 6 groups: 3 control groups (A, B, C) and 3 DP treated groups (D, E, F). The cats in the treated group were administered 0.9 mL of DP on day 0 while the cats in the control group were untreated. The animals were infested individually with 100 adult fleas (Ctenocephalides felis) on days –5, –2 and 7. The fleas were combed and removed from cats for assessment and categorized as live, moribund or dead: on day-4 for all cats; on day 0: 3 and 5h (A and D), 4 and 8h (B and E), 1 and 2h (C and F) after treatment; on day 7: 1 and 4h (A and D), 2 and 6h (B and E), 3 and 12h (C and F) after infestation. Live fleas were considered as a failure and insecticidal efficacy was calculated using arithmetic means (AM) and the Abbott formula. The groups were compared at each time-point post-treatment by one-way ANOVA. The level of significance was set at 5%. The cats were under general health observation for the duration of the study.

RESULTS:

In the control groups, the AM number of live fleas ranged from 59.3 to 76.4. The treated cats tolerated the product well. The insecticidal efficacy measured 1h after treatment or infestation was 66.8 and 74.6%, respectively. In both therapeutic and prevention situations, the insecticidal efficacy of DP was above 97% within 2h (Figure). This study demonstrated that a single topical administration of DP can kill fleas within 2h of treatment and infestation in cats, providing a reliable weapon against flea infestations.