Comparative palatability of three commercial formulations of carprofen and one commercial formulation of firocoxib in dogs

M. PAYNE-JOHNSON, T. P. MAITLAND, J. BULLARD and J. GOSSELLIN*

Veterinary Medicine Research and Development, Pfizer Ltd., Ramsgate Road, Sandwich Kent, CT13 9NJ, United Kingdom.

*Corresponding author: E-mail: Jacques.Gosselin@Pfizer.com

SUMMARY

A series of six palatability studies, employing acceptance (three studies) and preference (three studies) tests, were used to compare the voluntary acceptance, preference and consumption of a palatable formulation of carprofen (Rimadyl® Chewable Tablets or Rimadyl® Palatable Tablets; Pfizer Animal Health) with those of two generic formulations of carprofen (Carprofen Tablets; Ceva and Norocarp® Tablets; Norbrook) and a formulation of firocoxib (Previcox® Chewable Tablets; Mérial), respectively. All the studies took place at the same kennels and each involved dogs of various and mixed breeds with ages ranging from one to 11 years. Rimadyl® consistently demonstrated significantly better palatability in terms of voluntary choice, prehension and full consumption when compared with each of the other three products Carprofyl®, Norocarp® and Previcox®.

Key-Words: palatability, acceptance test, preference test, carprofen, firocoxib, dog

Introduction

In veterinary medicine, the therapeutic success of a dispensed treatment regimen is dependent upon both owner and patient compliance. In the context of drug therapy, compliance is defined as the degree of correlation between the prescribed drug regimen and the actual dosing history. Assessing compliance involves various difficulties, which include determining whether the patient has received the correct dose at the correct frequency for the correct duration of prescribed therapy [3].

There is little work on veterinary therapeutic compliance reported in the literature, however there are indications that owner compliance with antimicrobial therapy in dogs is far from ideal [1, 2].

Various strategies may be adopted to minimise the risk of poor compliance. These include providing product information to the owner, ensuring that all medicines are labelled with clear and concise instructions and careful monitoring of the progress of drug therapy.

The use of highly palatable formulations of drugs intended for oral administration is an effective way to help ensure that the prescribed treatment regimen will be adhered to. Oral palatable formulations which are voluntarily accepted and consumed by the dog from a bowl, or from an outstretched hand, optimise convenience and compliance especially for the treatment of chronic pathologies such as osteoarthritis which require regular long-term dosing [6].

Recognising the importance of good compliance, some pharmaceutical companies have developed palatable formulations of various drugs for companion animals. These include products within several therapeutic classes including antiparasitics, antibiotics and more recently anti-inflammatory products.

There is currently no standardised method for assessing the palatability of pharmaceutical formulations in companion animals and little work has been published on the subject [6]. The most commonly used methods for assessing the palatability of pet foods are acceptance and preference tests. Various methods of reducing bias in such studies have been suggested [4, 6, 7]. These include: appropriate training of the Investigator in the experimental procedures; acclimatisation and familiarisation of the animals to the study procedures before commencing the study; use of a randomised allocation plan to assign products within and between days of testing;
conducting tests on several days; recording the time between offering the product and the time at which it is taken into the mouth (prehension) and the “two-bowl” methodology for preference tests. The studies described in this paper were designed using methodologies used in the pet food industry and adopted all of the foregoing principles in order to reduce bias.

The aim of this publication is to present the results of six palatability studies undertaken to compare the voluntary acceptance, preference and consumption of a palatable formulation of carprofen (Rimadyl® Chewable Tablets or Rimadyl® Palatable Tablets; Pfizer Animal Health) with those of two generic formulations of carprofen (Carprofyl Tablets; Ceva and Norocarp® Tablets; Norbrook) and a formulation of firocoxib (Previcox® Chewable Tablets; Merial), respectively.

Materials and methods

STUDY SITE DESCRIPTION

Six independent palatability studies (three acceptance test studies each with similar designs and three preference test studies each with similar designs) were conducted at the same site, a suitable commercial kennel facility where animal accommodation, standards of animal welfare, record keeping, and compliance were appropriate to satisfy the requirements of both the study protocols and local regulatory authorities. The Investigator had been trained to undertake the study procedure and his co-operation enabled unbiased assessments of the voluntary acceptance, preference and consumption of the products by the participating dogs. The dogs had access to drinking water and were fed a commercial diet and had exercise periods in groups or individually inside and/or outside.

ANIMALS

The animals selected for each of the six studies were dogs of various and mixed breeds. The breeds represented included Beagle, Belgian Shepherd, Border Collie, Boxer, Cocker Spaniel, Dalmatian, Fox Terrier, Golden Retriever, Greyhound, Labrador Retriever, Siberian Husky, Springer Spaniel and various unspecified mixed breeds. The actual number of dogs and the ratio of sexes, which participated in each study, are reported in Table II. At the start of each study, all participating dogs had ages ranging from approximately one to 11 years and all were estimated to weigh more than 12.5 kg (Studies 1, 3, 4 and 6) or 10 kg (Studies 2 and 5).

All dogs had been vaccinated against canine distemper, hepatitis, parvovirus, parainfluenza and leptospirosis and had been acclimatised to their environment prior to the start of each study.

STUDY DESIGNS AND PROCEDURES

The product comparisons made in each of the six studies reported in this paper are listed in Table I. In all studies, the comparisons were based on the administration of a single dosing unit of each product (i.e. a single or half tablet); therefore, depending on their body weight, individual dogs received various dosages (in mg/kg), which did not necessarily correspond to the recommended therapeutic dosage. In a series of four separate studies, the relative palatability of Rimadyl® Palatable Tablets (containing 50 mg carprofen; Pfizer Animal Health) was compared with that of Carprofyl Tablets (containing 50 mg carprofen; Ceva) and Previcox® Chewable Tablets (containing 57 mg firocoxib; Merial). For each of the product comparisons two studies were conducted, one of which used acceptance tests and one of which used preference tests. In two further studies, one using acceptance tests and one using preference tests, the relative palatability of Rimadyl® Chewable Tablets (same formulation as Rimadyl® Palatable Tablets but containing 75 mg carprofen, Pfizer Animal Health) and Norocarp® Tablets (containing 50 mg carprofen; Norbrook) was compared.

ACCEPTANCE TESTS

The design and procedures adopted for each of the three acceptance test studies were similar and are summarised below.

Each of the three acceptance test studies employed a two test, two day cross over design to compare the relative palatability of two non-steroidal anti-inflammatory products (NSAIDs) (Table III). In each acceptance test, each dog was presented with one tablet of each of the two products independently to assess voluntary acceptance and consumption (In Study 2, dogs with an estimated body weight of 10 - 15 kg were offered half a Rimadyl® Chewable Tablet, in order to avoid excessive overdose.) The order in which each product was offered, i.e. product A on the first day of testing and Product B on the second day of testing, or vice-versa, was determined according to a randomised allocation plan in order to reduce bias. This plan was designed in such a way that each product was offered to approximately 50% of the dogs on each of the two study days. Each dog carried out one test per day on up to two occasions and each product was offered to each dog on only one occasion. In Studies 1 and 3, tests were conducted on day 0 (the first day on which one of the products was offered) and on day 2. In Study 2, tests were conducted on consecutive days (days 0 and 1).

In each voluntary acceptance test, each animal was presented with one tablet of the assigned product in a bowl and the dog was allowed the opportunity to prehend and ingest the tablet. The bowl containing the tablet was positioned on the floor inside the animal’s pen. A timer was started when the dog was allowed access to the bowl after it had been positioned, and was stopped when the product entered the animal’s mouth. If after 30 seconds, the product had not been taken into the mouth, the tablet was offered to the dog by hand. The product was always offered in the right hand and a further 30 seconds was allowed for the dog to prehend the product. If, after a total of 60 seconds, the product had not been taken into the mouth the test was terminated. Consumption of the product, whether from the bowl or
from the hand, was assessed as “full”, “partial” or “none” and was recorded for each test. After each dog completed the test, the bowl was cleaned with kitchen paper and the operator washed his or her hands with just water.

**PREFERENCE TESTS**

The design and procedures adopted for each of the three preference test studies were similar and are summarised below.

Each of the three preference test studies was designed as a paired comparison test to compare the relative palatability of two NSAID products (Table IV). In each preference test, each dog was presented with one tablet of each of the two products simultaneously to assess choice and voluntary consumption. (In Study 5, dogs with an estimated body weight of 10 - 15 kg were offered half a Rimadyl® Chewable Tablet, in order to avoid excessive over dosage.) The two products were randomly allocated to the two bowls of a test tray; one product was allocated to the left bowl and the other to the right bowl according to a randomised allocation plan in order to reduce bias. Each dog carried out one test per day on up to three separate occasions. In Studies 4 and 6, tests were conducted on day 0 (the first day on which the products were offered) and on days 2 and 4. In Study 5, tests were conducted on three consecutive days (days 0, 1 and 2).

In each preference test, each dog was presented with the test tray with one tablet of each product in each of the two bowls, according to the randomised allocation plan, and the dog was allowed to prehend and ingest its choice of product. The test tray was positioned on the floor inside the animal’s pen. A timer was started when the dog was allowed access to the test tray after it had been positioned, and was stopped when the first product entered the animal’s mouth. If after 30 seconds, neither product had been taken into the mouth,
both tablets were simultaneously offered to the dog by hand. The product from the left bowl of the test tray was held in the left hand and that from the right bowl in the right hand and a further 30 seconds was allowed for the dog to prehend one of the two products. If, after a total of 60 seconds, neither product had been taken into the mouth the test was termi-

### Table III. – Experimental design for studies using acceptance tests

<table>
<thead>
<tr>
<th>Study</th>
<th>Products</th>
<th>Regimen*</th>
<th>Route of administration</th>
<th>Study days on which the products were offered**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rimadyl® Palatable Tablets (50 mg) (50 mg carprofen per tablet)</td>
<td>One tablet once (if taken)</td>
<td>Oral</td>
<td>0 or 2</td>
</tr>
<tr>
<td></td>
<td>Carprofyl® Tablets (50 mg) (50 mg carprofen per tablet)</td>
<td>One tablet once (if taken)</td>
<td>Oral</td>
<td>0 or 2</td>
</tr>
<tr>
<td>2</td>
<td>Rimadyl® Chewable Tablets (75 mg) (75 mg carprofen per tablet)</td>
<td>One tablet once (if taken)</td>
<td>Oral</td>
<td>0 or 1</td>
</tr>
<tr>
<td></td>
<td>Norocarp® Tablets (50 mg) (50 mg carprofen per tablet)</td>
<td>One tablet once (if taken)</td>
<td>Oral</td>
<td>0 or 1</td>
</tr>
<tr>
<td>3</td>
<td>Rimadyl® Palatable Tablets (50 mg) (50 mg carprofen per tablet)</td>
<td>One tablet once (if taken)</td>
<td>Oral</td>
<td>0 or 2</td>
</tr>
<tr>
<td></td>
<td>Previcox® Chewable Tablets (57 mg) (57 mg firocoxib per tablet)</td>
<td>One tablet once (if taken)</td>
<td>Oral</td>
<td>0 or 2</td>
</tr>
</tbody>
</table>

* Animals did not necessarily prehend and/or ingest the investigational veterinary product(s).
** As determined by randomised allocation plan.
*** Dogs with an estimated body weight of 10-15 kg were offered half a Rimadyl® Chewable tablet.

### Table IV. – Experimental design for studies using preference tests

<table>
<thead>
<tr>
<th>Study</th>
<th>Products</th>
<th>Regimen*</th>
<th>Route of administration</th>
<th>Study days on which the products were offered</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>Rimadyl® Palatable Tablets (50 mg) (50 mg carprofen per tablet)</td>
<td>One tablet daily on alternate days (if taken)</td>
<td>Oral</td>
<td>0, 2 and 4</td>
</tr>
<tr>
<td></td>
<td>Carprofyl® Tablets (50 mg) (50 mg carprofen per tablet)</td>
<td>One tablet daily on alternate days (if taken)</td>
<td>Oral</td>
<td>0, 2 and 4</td>
</tr>
<tr>
<td>5</td>
<td>Rimadyl® Chewable Tablets (75 mg) (75 mg carprofen per tablet)</td>
<td>One tablet daily (if taken)</td>
<td>Oral</td>
<td>0, 1 and 2</td>
</tr>
<tr>
<td></td>
<td>Norocarp® Tablets (50 mg) (50 mg carprofen per tablet)</td>
<td>One tablet daily (if taken)</td>
<td>Oral</td>
<td>0, 1 and 2</td>
</tr>
<tr>
<td>6</td>
<td>Rimadyl® Palatable Tablets (50 mg) (50 mg carprofen per tablet)</td>
<td>One tablet daily on alternate days (if taken)</td>
<td>Oral</td>
<td>0, 2 and 4</td>
</tr>
<tr>
<td></td>
<td>Previcox® Chewable Tablets (57 mg) (57 mg firocoxib per tablet)</td>
<td>One tablet daily on alternate days (if taken)</td>
<td>Oral</td>
<td>0, 2 and 4</td>
</tr>
</tbody>
</table>

* Animals did not necessarily prehend and/or ingest the investigational veterinary product(s).
Consumption of the second product was not permitted.
** Dogs with an estimated body weight of 10-15 kg were offered half a Rimadyl® Chewable tablet.
nated. Consumption of the product, whether from the bowl or from the hand, was assessed as “full”, “partial” or “none” and was recorded for each test. Wherever possible, consumption of the second product was not permitted. After each dog completed the test, the bowls of the test tray were cleaned with kitchen paper and the operator washed his or her hands with just water.

GENERAL PROCEDURES

For all acceptance and preference tests, the products were stored in accordance with the manufacturer’s recommendations and during preparation for each test, each product was handled with separate tweezers.

In each of the six studies, the acceptance and preference tests for each dog commenced at approximately the same time on each study day and all dogs were fed after completion of the test procedures.

On each day of the study, the general health of all of the participating animals was monitored. Any observations of abnormal health were brought to the attention of the owner of the kennels and, where appropriate, dogs received veterinary attention. Following each of the six studies, dogs which had participated in testing procedures returned to their normal activities and were monitored for an appropriate period. There were no observations of abnormal health or adverse events in any of the six studies reported here which were considered to have been associated with any of the products offered to, or consumed by, the dogs which participated.

STATISTICAL ANALYSIS

Appropriate summaries of the number and percentage of dogs which accepted or chose the different products and consumption (assessed as “full” “partial” or “none”) were calculated for each study.

For the purposes of the statistical analyses, the dog was considered to be the experimental unit.

ACCEPTANCE TEST STUDIES

For each dog, the outcome of the test was categorised in one of four possible ways: 1) full consumption of both products; 2) full consumption of product A, incomplete or no consumption of product B; 3) full consumption of product B, incomplete or no consumption of product A; 4) incomplete or no consumption of both products. McNemar’s test was used to assess any difference in full consumption of the two products at the 10% level of statistical significance.

PREFERENCE TEST STUDIES

The preferred product was determined for each dog as follows: if the dog chose product A more times than product B, it was said to have expressed a preference for product A and vice-versa. If the dog chose each product an equal number of times, it was said to have expressed no preference. The number and percentage of dogs preferring each product (100*(the number of dogs preferring product A or B/ the total number of dogs showing a preference)) was calculated and a Chi-Square test was used to compare the percentage of dogs preferring each product. For Studies 4 and 6 the 10% level of statistical significance was used and for Study 5 the 5% level of statistical significance was used.

Results

ACCEPTANCE TEST STUDIES

Study 1 - Rimadyl® Palatable Tablets (50 mg) vs. Carprodyl® Tablets (50 mg)

A total of 45 dogs of various and mixed breeds participated in the study. Over the two study days (days 0 and 2), a total of 90 individual voluntary acceptance tests were conducted. Forty-four dogs were each offered a Carprodyl® tablet once and 44 dogs were each offered a Rimadyl® tablet once. Due to an inadvertent error, two dogs were offered the wrong product on day 2 resulting in the same product being offered on both study days; the results of the day 2 tests for these two animals were excluded from the statistical analyses. One of the two products was prehended in 79 out of the total of 88 individual acceptance tests. Carprodyl® tablets were prehended by 35 dogs (79.5%) and Rimadyl® tablets were prehended by 44 dogs (100%) (Figure 1a). Of the 35 dogs which prehended a Carprodyl® tablet, 11 dogs (31.4%) voluntarily fully consumed the product and of the 44 dogs which prehended a Rimadyl® tablet, 41 dogs (93.2%) voluntarily fully consumed the product (Figure 1b). In the voluntary acceptance tests included in the statistical analyses, 25% of dogs which were offered Carprodyl® tablets voluntarily fully consumed the product and 93% of those same dogs voluntarily fully consumed Rimadyl® tablets. The difference in voluntary full consumption between the two products was shown to be highly significant (Table V).

Study 2 - Rimadyl® Chewable Tablets (75 mg) vs. Norocarp® Tablets (50 mg)

A total of 43 dogs of various and mixed breeds participated in the study. Over the two study days (days 0 and 1), a total of 86 individual voluntary acceptance tests were conducted. Forty-three dogs were each offered a Norocarp® tablet once and 43 dogs were each offered either a half or a whole Rimadyl® tablet once. One of the two products was prehended in 73 out of the total of 86 individual acceptance tests. Norocarp® tablets were prehended by 32 dogs (74.4%) and Rimadyl® tablets were prehended by 41 dogs (95.3%) (Figure 2a). Of the 32 dogs which prehended a Norocarp® tablet, 21 dogs (65.6%) voluntarily fully consumed the product and of the 41 dogs which prehended a Rimadyl® tablet, 39 dogs (95.1%) voluntarily fully consumed the product (Figure 2b). In the 86 voluntary acceptance tests, 49% of dogs which were offered Norocarp® tablets voluntarily fully consumed the product and 91% of those same dogs voluntarily fully consumed Rimadyl® tablets. The difference in voluntary full consumption between the two products was shown to be highly significant (Table V).
Study 3 - Rimadyl® Palatable Tablets (50 mg) vs. Previcox® Chewable Tablets (57 mg)

A total of 49 dogs of various and mixed breeds participated in the study. Over the two study days (days 0 and 2), a total of 97 individual voluntary acceptance tests were conducted. Forty-eight dogs were each offered a Previcox® tablet once and 49 dogs were each offered a Rimadyl® tablet once; one dog did not participate in acceptance test procedures on day 2. One of the two products was prehended in 88 out of the total of 97 individual acceptance tests. Previcox® tablets were prehended by 39 dogs (81.3%) and Rimadyl® tablets were prehended by 49 dogs (100.0%) (Figure 3a). Of the 39 dogs which prehended a Previcox® tablet, 23 dogs (59.0%) voluntarily fully consumed the product and of the 49 dogs which prehended a Rimadyl® tablet, 48 dogs (98.0%) voluntarily fully consumed the product (Figure 3b). In the 97 voluntary acceptance tests, 48% of dogs which were offered Previcox® tablets voluntarily fully consumed the product and 98% of those same dogs voluntarily fully consumed Rimadyl® tablets. The difference in voluntary full consumption between the two products was shown to be highly significant (Table V).

For those dogs which prehended Rimadyl® tablets, the results indicate that on most occasions the product was taken within the first 30 seconds after the dog was allowed access to the bowl (97.7%, 95.3% and 95.9% of occasions for Studies 1, 2 and 3, respectively). For those dogs which prehended Carprodyl®, Norocarp® or Previcox® tablets in the corresponding studies, the tablet was taken from the bowl (97.7%, 95.3% and 95.9% of occasions for Studies 1, 2 and 3, respectively). For those dogs which prehended Carprodyl®, Norocarp® or Previcox® tablets in the corresponding studies, the tablet was taken from the bowl (97.7%, 95.3% and 95.9% of occasions for Studies 1, 2 and 3, respectively).

Table V. – Number and percentage of dogs which voluntarily prehended and fully consumed the products in the Acceptance Test Studies.

<table>
<thead>
<tr>
<th>Study</th>
<th>Product</th>
<th>Number of dogs to which products were offered</th>
<th>Number and (%) of dogs which voluntarily prehended and fully consumed each product</th>
<th>P value for McNemar’s test</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Rimadyl®</td>
<td>44</td>
<td>41 (93.2)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td></td>
<td>Carprodyl®</td>
<td>44</td>
<td>11 (25.0)</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Rimadyl®</td>
<td>43</td>
<td>39 (90.7)</td>
<td>&lt; 0.005</td>
</tr>
<tr>
<td></td>
<td>Norocarp®</td>
<td>43</td>
<td>21 (48.8)</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Rimadyl®</td>
<td>49</td>
<td>48 (98.0)</td>
<td>&lt; 0.001</td>
</tr>
<tr>
<td></td>
<td>Previcox®</td>
<td>48</td>
<td>23 (47.9)</td>
<td></td>
</tr>
</tbody>
</table>

PREFERENCE TEST STUDIES

Study 4 - Rimadyl® Palatable Tablets (50 mg) vs. Carprodyl® Tablets (50 mg)

A total of 44 dogs of various and mixed breeds participated in the study. Over the three study days, a total of 131 individual preference tests were conducted in which 43 dogs were each offered one Carprodyl® tablet and one Rimadyl® tablet simultaneously on three separate occasions (on study days 0, 2 and 4); one dog participated in testing on days 0 and 2 only. One of the two products was prehended in 129 out of the total of 131 individual tests. Carprodyl® tablets were prehended on five occasions (3.8% of all tests); Rimadyl® tablets were prehended on 124 occasions (94.7% of all tests); on two occasions (1.5%) no choice was made (Figure 4a). All of the 44 dogs which participated in the study expressed a preference for one of the two products; one dog (2.3%) expressed a preference for Carprodyl® and 43 dogs (97.7%) expressed a preference for Rimadyl®. This difference was shown to be highly significant (Table VI). When Carprodyl® tablets were prehended, voluntary full consumption was observed on 2 out of 5 occasions (40.0%); when Rimadyl® tablets were prehended, voluntary full consumption was observed on 120 out of 124 occasions (96.8%) (Figure 4b).

Study 5 - Rimadyl® Chewable Tablets (75 mg) vs. Norocarp® Tablets (50 mg)

A total of 42 dogs of various and mixed breeds participated in the study. Over the three study days, a total of 124 individual preference tests were conducted in which 41 dogs were each offered one Norocarp® tablet and either a half or a whole Rimadyl® tablet simultaneously on three separate occasions (on study days 0, 1 and 2); one dog participated in testing on day 0 only. One of the two products was prehended in 119 out of the total of 124 individual tests. Norocarp® tablets were prehended on 21 occasions (16.9% of all tests); Rimadyl® tablets were prehended on 98 occasions (79.0% of all tests); on five occasions (4.0%) no choice was made (Figure 5a). Forty of the 41 dogs which participated in the study for three days expressed a preference for one of the two products; overall, three dogs (7.3%) expressed a preference for Norocarp® and 37 dogs (90.2%) expressed a preference for Rimadyl®. This difference was shown to be highly significant (Table VI). When Norocarp® tablets were prehended, voluntary full consumption was observed on 14 out of 21 occasions (66.7%); when Rimadyl® tablets were prehended, voluntary full consumption was observed on 95 out of 98 occasions (96.9%) (Figure 5b).

Study 6 - Rimadyl® Palatable Tablets (50 mg) vs. Previcox® Tablets (57 mg)

A total of 44 dogs of various and mixed breeds participated in the study. Over the three study days, a total of 130 individual preference tests were conducted in which 42 dogs were each offered one Previcox® tablet and one Rimadyl® tablet simultaneously on three separate occasions (on study days 0, 2 and 4); two dogs participated in testing on days 0 and 2 only. One of the two products was prehended in 122 out of the total of 130 individual tests. Previcox® tablets were prehended on 22 occasions (16.9% of all tests); Rimadyl® tablets were prehended on 100 occasions (76.9% of all tests); on eight occasions (6.2%) no choice was made.
COMPARATIVE PALATABILITY OF CARPROFEN AND FIROCOXIB IN DOGS

Figure 1a. – Comparison of the relative palatability of Carprofyl and Rimadyl using Acceptance Tests (Study 1) – Prehension of products

Figure 1b. – Comparison of the relative palatability of Carprofyl and Rimadyl using Acceptance Tests (Study 1) – Consumption of products where a tablet was taken

Figure 2a. – Comparison of the relative palatability of Norocarp and Rimadyl using Acceptance Tests (Study 2) – Prehension of products

Figure 2b. – Comparison of the relative palatability of Norocarp and Rimadyl using Acceptance Tests (Study 2) – Consumption of products where a tablet was taken

Figure 3a. – Comparison of the relative palatability of Previcox and Rimadyl using Acceptance Tests (Study 3) – Prehension of products

Figure 3b. – Comparison of the relative palatability of Previcox and Rimadyl using Acceptance Tests (Study 3) – Consumption of products where a tablet was taken

1 Due to rounding, the sums of percentages may not exactly equal 100%
Figure 4a. – Comparison of the relative palatability of Carprodyl and Rimadyl using Preference Tests (Study 4) – Choice of products

Figure 4b. – Comparison of the relative palatability of Carprodyl and Rimadyl using Preference Tests (Study 4) – Consumption of products where a tablet was taken

Figure 5a. – Comparison of the relative palatability of Norocarp and Rimadyl using Preference Tests (Study 5) – Choice of products

Figure 5b. – Comparison of the relative palatability of Norocarp and Rimadyl using Preference Tests (Study 5) – Consumption of products where a tablet was taken

Figure 6a. – Comparison of the relative palatability of Previcox and Rimadyl using Preference Tests (Study 6) – Choice of products

Figure 6b. – Comparison of the relative palatability of Previcox and Rimadyl using Preference Tests (Study 6) – Consumption of products where a tablet was taken

*Percentage of tests where neither product was prehended within the 60 second test period

Due to rounding, the sums of percentages may not exactly equal 100%
Forty-two of the 44 dogs which participated in the study expressed a preference for one of the two products; overall, seven dogs (15.9%) expressed a preference for Previcox® and 35 dogs (79.5%) expressed a preference for Rimadyl®. This difference was shown to be highly significant (Table VI). When Previcox® tablets were prehended, voluntary full consumption was observed on 14 out of 22 occasions (63.6%); when Rimadyl® tablets were prehended, voluntary full consumption was observed on 99 out of 100 occasions (99.0%) (Figure 6b).

Discussion

In each of the three acceptance test studies, the voluntary acceptance of Rimadyl® tablets by dogs was similar - Rimadyl® tablets were prehended on 100.0%, 95.3% and 100.0% of the occasions on which they were offered in Studies 1, 2 and 3, respectively. In the same studies, the corresponding rates of prehension for Carprofen®, Norocarp® and Previcox® tablets were 79.5%, 74.4% and 81.3% of the occasions on which they were offered. When Rimadyl® tablets were prehended, full consumption occurred on 93.2%, 95.0% and 98.0% of occasions in Studies 1, 2 and 3, respectively. In each of the three studies, this was considerably higher than the corresponding level of full consumption following prehension observed for the comparator products – Carprofen® 31.4%, Norocarp® 66.7% and Previcox® 59.0% (in Studies 1, 2 and 3, respectively).

In each of the three studies, more than 95% of dogs voluntarily accepted Rimadyl® tablets and this was followed by full consumption on more than 90% of occasions on which the tablets were prehended. Within the three comparator products, the rate of prehension was broadly similar, however the level of full consumption observed following prehension of Carprofen® was markedly lower than that for Norocarp® or Previcox®. The studies demonstrated that, when compared under similar conditions, the voluntary acceptance and full consumption of Rimadyl® was significantly higher than for any of the three comparator products. The procedures adopted for the six studies reported in this paper were adapted from the methodology used by the food industry for testing diets in dogs and cats [5] and used recognised methods for reducing bias. Consequently, the observations reported in this paper are considered to be a fair assessment of the relative palatability of the products in the population of dogs at this commercial kennel facility.

Conclusions

These studies clearly demonstrated that Rimadyl® tablets were chosen, prehended and fully consumed more often than those of Carprofen®, Norocarp® and Previcox®. The high levels of voluntary acceptance and full consumption observed when Rimadyl® tablets were offered to dogs in these studies indicate significantly superior palatability to those of the three comparator products. In the clinical situation these attributes should lead to superior patient and owner dosing compliance and thereby therapeutic success.
REFERENCES