Approval Date: January 6, 1987

FREEDOM OF INFORMATION SUMMARY

I. GENERAL INFORMATION

A. File Number

NADA 138-869

B. Sponsor

Med-Tech, Inc.
A Division of TechAmerica
Group, Inc.
P.O. Box 338
Elwood, Kansas 66024

C. Proprietary Name

Triamcinolone Acetonide Injection, 2 mg/ml & 6 mg/ml

D. Established Name

triamcinolone acetonide

E. Dosage Form, Route of Administration and Dosage Regimen

The keystone of satisfactory therapeutic management with triamcinolone acetonide, as with other steroids, is individualization of dosage in reference to the severity of the disease, the anticipated duration of steroid therapy and the animal's threshold or tolerance for steroid excess. The prime objective of steroid therapy should be to achieve a satisfactory degree of control with a minimum effective dose. To minimize the adverse effects from withdrawal or reduction in dosage, cautiously decrease dosage in a gradual manner. In dogs, dosing in the morning may also be beneficial in minimizing effects because nocturnal pituitary/adrenal activity will be less inhibited. In chronic conditions, and in rheumatoid arthritis especially, it is important that the reduction in dosage from initial to maintenance dose levels be accomplished slowly.

Intramuscular Or Subcutaneous Dosage And Administration

Following intramuscular injection of triamcinolone acetonide, a prolonged systemic effect results. The dose may vary with the size of the animal, the severity of the condition being treated and the animal's response to therapy.

Dogs and Cats:

The recommended dosage is 0.05 mg to 0.1 mg triamcinolone acetonide per pound body weight as a single injection for the treatment of inflammatory or allergic disorders. For the treatment of dermatologic disorders, administer a single injection of 0.l mg per pound body weight. Remission of symptoms, if not permanent, usually lasts 7 to 15 days. After this time, if symptoms recur, the dose may be repeated or oral corticosteroid therapy may be instituted.

Horses:

The recommended dosage is 0.01 mg to 0.02 mg triamcinolone acetonide per pound of body weight as a single injection; the usual range is 12 to 20 mg.

Intralesional Dosage And Administration

Dogs and Cats:

The usual intralesional dosage is 1.2 mg to 1.8 mg triamcinolone acetonide. Injections should be circumscribed around the lesion in various sites to insure adequate distribution of the dose. Injections should be spaced 0.5 cm to 2.5 cm apart depending on the size of the lesion. The spacing of the dose also reduces pain and/or pressure necrosis.

The dose injected at any one site should not exceed 0.6 mg to minimize local tissue intolerance and atrophy, and should be made well into the cutis to prevent subsequent rupture of the epidermis. When treating dogs and cats with multiple lesions, do not exceed a total dose of 6 mg. Repeat courses of treatment may be administered if necessary.

It is preferable to employ a tuberculin syringe with a small bore needle (23-25 gauge) for accuracy of dose measurement and ease of administration.

Intra-Articular And Intrasynovial Dosage And Administration

Dogs, Cats and Horses:

The dosage for intra-articular and intrasynovial administration is dependent on the size of the joint to be treated and on the severity of symptoms. A single injection of 1.0 mg to 3.0 mg triamcinolone acetonide for cats and dogs and 6.0 mg to 18.0 mg for horses is recommended. After three or four days, injections may be repeated depending on the severity of symptoms and the clinical response.

If initial results are inadequate or too transient, dosage may be increased, but the maximum recommended dose should not be exceeded.

Routine aseptic preparation of the area should be made prior to all intra-articular injections. The anatomy of the area to be injected should be reviewed in order to assure that the suspension is properly placed and to determine that large blood vessels or nerves are avoided. The inadvertent administration of the corticosteroid into the soft tissues surrounding a joint is not harmful, but is the most common cause of failure for not achieving the desired local results.

Following intra-articular administration, pain and other local symptoms may continue for a short time before effective relief is obtained, but an increase in joint discomfort is rare. A marked increase in pain accompanied by local swelling, further restriction of joint motion, fever and malaise are suggestive of a septic arthritis. If these complications should occur, and the diagnosis of sepsis is confirmed, antimicrobial therapy should be instituted immediately and continued until all evidence of infection has disappeared.

F. Dispensing Status

Rx

G. Indication

Triamcinolone acetonide is a highly potent glucocorticoid effective in the treatment of inflammation and related disorders in dogs, cats and horses. It is also indicated for use in the management and treatment of acute arthritis and allergic and dermatologic disorders in dogs and cats.

The product is recommended for intramuscular, subcutaneous, intra-articular and intrasynovial injection in dogs, cats and horses and intralesional injection in dogs and cats.

II. EFFECTIVENESS

The efficacy of the drug has been established by the National Academy of Science and National Research Council (NAS/NRC) which evaluated the drug as effective as an antiinflammatory agent. The Food and Drug Administration concurred with the findings of The Academy which published in the Federal Register on April 12, 1969. Accordingly, a study was conducted by TechAmerica Research Center (TARC), formerly known as Elars Bioresearch Laboratories, 225 Commerce Drive, Fort Collins, CO 80524 under the direct supervision of Dr. James Schafer, to demonstrate the comparative bioavailability of Med-Tech's Triamcinolone Acetonide Injection to Squibb's approved Vetalog® Parenteral.

The study was of a crossover design utilizing twenty healthy young adult Beagles (ten males and ten females). The dogs were randomly assigned to one of two groups consisting of five males and five females each. Following a twelve-hour fast, dogs in Group I were administered a single intramuscular injection of a positive control, Squibb's Vetalog® Parenteral. Dogs in Group II received the same dosage of Med- Tech's Triamcinolone Acetonide Injection. The dosage for all treatments was administered at the rate of 0.1 mg triamcinolone acetonide per pound of body weight to the nearest 0.01 ml. The fast continued for 12 hours post-treatment for a combined 24-hour fast. Following a 5-week washout period, the procedure was repeated with Group I receiving the MedTech product and Group II receiving the Squibb material.

Venous blood samples were collected at 48 hours prior to treatment, immediately prior to treatment and at 1, 2, 3, 4, 5, 6, 8, 12, 16, 24, 48, 72, 96, 120, 168, 336, 504 and 672 hours post-treatment in both periods of the study. (Animals were fasted for 12 hours immediately prior to each pre-treatment sampling.) Samples were analyzed for serum glucose levels and direct eosinophil counts.

The direct eosinophil counts and glucose levels monitored from 1 to 672 hours post-treatment were analyzed using a standard splitplot ANOVA model with the following sources of variation: Groups, Animals (Within Groups), Periods, Period by Group, Period by Animal (Group), Time, Time by Group, Time by Animal (Group), Time by Period, and Time by Period by Group and Time by Period by Animal (Group). The "Period by Group" term provided a comparison of the two products with regards to the overall eosinophil count and mean glucose levels. The "Time by Period by Group" term provided a comparison of the two products with regard to the general shape of the eosinophil and glucose curves over time. For eosinophil counts and glucose levels the data were log-transformed prior to analysis, (Eosinophil used $\ln(1+x)$ and glucose used $\ln(x)$).

When the complete range of data was used, the overall mean log eosinophilcounts for the two products were significantly different (p=0.0112) as were the shapes of the two curves (p=0.0007). (The observed percent difference in the overall means was 28.44%). Individual analyses were done for each sample time and the two formulations were significantly different at 4, 16, 72, 96, 120 and 168 hours post- treatment. Thus most of the significant differences occurred at time points of 72 or greater hours post-treatment, which represented the blood depletion phase of the comparisons.

When, the complete range of data was used, the mean log glucose levels for the two products were not significantly different (p=0.4806); however, the shapes of the two curves were significantly different (p=0.0003). (The observed percent difference for the overall means was -0.79%). Again individual time analyses were done and the two formulations were significantly different at 3, 4, 6, 12,120 and 504 hours post- treatment.

In the case of the eosinophil counts the differences, although statistically detectable, occurred primarily beyond 24 hours and were considered too small to be biomedically important. In the case of the glucose levels the differences were erratic and again were considered too small to be biomedically important. Consequently Med-Tech's product was judged medically bioequivalent to Squibb's product.

III. TARGET ANIMAL SAFETY

The NAS/NRC review indicates that triamcinolone acetonide is safe for use at the recommended dosages reflected on the product labeling.

IV. HUMAN FOOD SAFETY

As labeled, the drug poses no hazard to human safety pertaining to drug residues, because it is labeled for use in non-food producing animals (dogs, cats and horses).

Human Safety Relative to Possession, Handling and Administration:

The labeling contains adequate caution/warning statements.

V. AGENCY CONCLUSIONS

The data submitted in support of this NADA comply with the requirements of Section 512 of the Act and Section 514.111 of the regulations. It demonstrates that triamcinolone acetonide, when used under its labeled conditions of use, is safe and effective. The efficacy of the drug product was established by the National Academy of Sciences National Research Council (NAS/NRC) which evaluated the drug as being effective as an antiinflammatory agent for use in dogs and cats. The Food and Drug Administration concurred with these findings.

The drug is restricted to use by or on the order of a licensed veterinarian because knowledge of veterinary medicine is needed for the accurate diagnosis of conditions for which the drug is intended and for the monitoring of treatment and possible adverse reactions.

The format of this FOI Summary document has been modified from its original form to conform with Section 508 of the Rehabilitation Act (29 U.S.C. 794d). The content of this document has not changed.