EXPLORATIONS
in Veterinary Medicine

WINSTROL®-V (stanozolol) Therapy and Nitrogen Retention in Dogs

results

THE BIG PICTURE.

- *Both oral and injectable treatment with WINSTROL-V significantly increased amino acid nitrogen retention compared with pretreatment values ($P<0.05$).*
- *The response to injectable WINSTROL-V was significantly greater than the response to oral administration.*
- *An initial injection of WINSTROL-V can be followed by tablets dispensed daily at home.*[1]

Source Material: Olson ME, Morck DW, Quinn KB. The effect of stanozolol on ^{15}nitrogen retention in the dog. *Can J Vet Res.* 2000;64:246-248.

THE PROCESS OF DISCOVERY.

Veterinarians often prescribe tissue-building therapy when excessive tissue breakdown or extensive tissue repair is under way. Both of these processes can diminish protein reserves, leading to negative nitrogen balance and tissue wasting. WINSTROL-V Tablets and Sterile Suspension (stanozolol) are indicated to reverse tissue-depleting processes and restore constructive metabolism.[1] Yet the published veterinary literature contains little on the specific nitrogen-sparing action of WINSTROL-V therapy. The purpose of this study was to evaluate the influence of oral and intramuscular administration of WINSTROL-V on body weight and nitrogen retention by using a noninvasive ^{15}N-amino acid tracer.

HOW THE STUDY WAS CONDUCTED.

On Day 0, before treatment began, a solution of ^{15}N-labeled amino acids was administered intravenously to 10 healthy, intact male sled dogs weighing 45 to 75 lb (20.5 to 35 kg). Urine was collected 3 times daily for 3 consecutive days via urinary catheter. On Day 7, 5 dogs began treatment with WINSTROL-V Tablets, 2 mg/dog PO, q12h for 25 days. The other 5 dogs received an intramuscular injection of 25 mg WINSTROL-V Sterile Suspension on Days 7, 14, 21, and 28. Both formulations were given at the minimum recommended dose. On Day 30, another infusion of ^{15}N-labeled amino acids was given, again followed by urine collection 3 times daily for 3 days. Urine volumes were recorded and the ^{15}N-enrichment determined by high-resolution mass spectrometry for all samples collected before and after administration of WINSTROL-V.

WHAT WAS LEARNED.

Both oral and injectable WINSTROL-V treatments significantly increased amino acid nitrogen retention compared with pretreatment values ($P<0.05$). The response to injectable WINSTROL-V was significantly greater than the response to oral administration. Body weight did not change significantly following either treatment, and no adverse events occurred in any of the dogs.

Table 1. Effect of Oral or Injectable WINSTROL-V on Body Weight and Nitrogen Balance

Treatment	Body Weight (kg)	^{15}N Retained (%)
Before oral WINSTROL-V, Day 0	27.3 ± 5.2	29.2 ± 8.2[a]
After oral WINSTROL-V, Day 31	28.2 ± 6.0	50.3 ± 9.2[b]
Before injectable WINSTROL-V, Day 0	28.6 ± 3.8	26.6 ± 9.9[a]
After injectable WINSTROL-V, Day 31	29.7 ± 4.0	67.0 ± 7.5[c]

Data are expressed as mean values ± SEM (standard error of the mean).
Values with different superscripts are significantly different ($P<0.05$).

TALK IT OUT.

Unlike other medications in its class—such as androgens, estrogens, and corticosteroids—stanozolol, the active ingredient in WINSTROL®-V Tablets and Sterile Suspension, exerts a pronounced effect on constructive metabolism. As a member of a unique series of heterocyclic steroids, stanozolol possesses unusual endocrine activity, with its tissue-building effects far outweighing its weak masculinizing influence. Methyltestosterone also possesses tissue-building activity, but its predominant androgenic effects are not suitable for long-term therapy. By contrast, WINSTROL-V therapy increases retention of nitrogen and minerals, reverses tissue-depleting processes, and promotes better utilization of dietary protein.

The observation that the dogs in this study did not exhibit significant weight gain was most likely a reflection of the lower dose used for treatment of these sled dogs. Administration of the higher dose would be more likely to result in more appreciable weight gain.

In situations such as surgical trauma, tissue-building action is desired, but appreciable weight gain is not. The increased retention of amino-acid-derived nitrogen without significant weight gain that was observed in this study demonstrates that WINSTROL-V is an ideal therapeutic choice in those situations.

For convenience, an injectable dose of WINSTROL-V can be administered initially, followed by tablets dispensed daily at home.[1]

Prolonged stanozolol therapy with excessively high doses may result in mild androgenic effects. WINSTROL-V should not be administered to pregnant dogs or cats.[1]

THE FINAL WORD.

This study confirmed the tissue-building actions of WINSTROL-V, which can benefit dogs with catabolic conditions, especially surgical trauma and chronic debilitating disease.

REFERENCE.

1. WINSTROL-V Tablets package insert. Kalamazoo, Mich: Pharmacia & Upjohn Co. Revised Aug 1998.

References

WINSTROL®-V Tablets

NDC 0009-3566-02

brand of stanozolol tablets

Anabolic Therapy for Oral Use in Dogs and Cats

DESCRIPTION

WINSTROL-V Tablets contain stanozolol which is 17-methyl-2´*H*-5α-androst-2-eno[3,2-c] pyrazol-17β-ol. It is a member of a unique series of heterocyclic steroids synthesized at the Sterling-Winthrop Research Institute. The unique endocrinologic activity of this compound was produced by the fusion of a pyrazole ring to a steroid nucleus. When administered to animals, WINSTROL-V was found to have an unusual pattern of biologic activity in that its anabolic (tissue-building) effect far outweighed its weak androgenic (masculinizing) influence.

CLINICAL PHARMACOLOGY

WINSTROL-V Tablets are classified as "anabolic steroids" because of their pronounced stimulatory effects on constructive metabolism. Stanozolol increases the retention of nitrogen and minerals, reverses tissue-depleting processes, and promotes better utilization of dietary protein. Its anabolic effects lead to improvement in appetite, increased vigor, and notable gains in weight. In this respect, it differs greatly from other steroids, such as the androgens, estrogens, and corticosteroids. Methyltestosterone also possesses anabolic action, but its predominant androgenic activity makes it unsuitable for long-term anabolic therapy. Although the frequently undesirable virilizing effects of the male sex hormones may be overcome by androgen-estrogen combinations, this does not improve their anabolic function. The corticosteroids (cortisone, prednisone, prednisolone, dexamethasone) comprise an entirely different group of steroids, which are well known for their anti-inflammatory and antirheumatic activities. As a rule, prolonged use of the corticosteroids results in a catabolic (tissue-wasting) effect which may be relieved by anabolic therapy.

In a wide variety of tests in animals, WINSTROL-V was shown to possess high anabolic potency, whereas its androgenic effect was very low. Extensive clinical investigations by veterinary practitioners have confirmed its anabolic action and therapeutic usefulness in dogs and cats.

INDICATIONS

Anabolic therapy with WINSTROL-V Tablets is indicated whenever excessive tissue breakdown or extensive repair processes are proceeding. Such processes usually diminish protein reserves in the tissues, thus leading to negative nitrogen balance. WINSTROL-V is indicated to reverse tissue-depleting processes and restore constructive metabolism. Anabolic therapy is intended primarily as an adjunct to other specific and supportive therapy, including nutrition therapy. Optimal results can be expected only when dietary intake is adequate and well balanced.

Dogs and Cats

WINSTROL-V Tablets are indicated when the therapeutic objective is to improve appetite, promote weight gain, and increase strength and vitality. For these reasons WINSTROL-V is recommended for anorexia, unthriftiness, weight loss, debility, cachexia, inanition and poor hair coat when these accompany disease, trauma, or old age. Since certain skin conditions occurring in older dogs (alopecia and some types of eczema, for example) are caused by metabolic disorders based on negative nitrogen balance, WINSTROL-V may help to control such conditions.

CONTRAINDICATIONS

Because the data regarding use during pregnancy are insufficient, WINSTROL-V should not be administered to pregnant dogs and cats.

WARNINGS

Not for human use. Keep out of reach of children.

PRECAUTIONS

When receiving anabolic therapy, animals with impaired cardiac and renal function should be watched closely for the possibility of sodium and water retention. Special caution should be exercised in aged dogs suffering from chronic interstitial nephritis. In such cases, the progress of the disorder should be checked by means of laboratory tests and treatment discontinued if the drug appears to aggravate the disease.

ADVERSE REACTIONS

Mild androgenic effects may be noted after prolonged therapy with excessively high doses.

DOSAGE AND ADMINISTRATION

Whenever indicated, anabolic therapy should be prescribed in conjunction with or as a follow-up to other therapeutic measures.

Dogs and Cats

The suggested oral dose for cats and small breeds of dogs is ½ to 1 tablet twice daily and for large breeds of dogs, 1 to 2 tablets twice daily, depending on body weight. If preferred, the WINSTROL-V Tablets can be crushed and administered in feed. Treatment should be continued for at least several weeks, depending on the condition and response of the animal. In certain chronic conditions, especially in aged dogs, treatment can be continued for several months without untoward reactions.

If desired, WINSTROL-V Tablets and WINSTROL-V Sterile Suspension can be combined in a regimen of therapy. Many investigating clinicians gave an initial dose of the injectable form and then dispensed tablets for daily administration at home.

HOW SUPPLIED

WINSTROL-V Tablets are available in the following package sizes:

bottles of 500 tablets . . . . . .**NDC** 0009-3566-02

Each scored tablet contains 2 mg stanozolol.

CAUTION: Federal (USA) law restricts this drug to use by or on the order of a licensed veterinarian.

Store at controlled room temperature 20° to 25° C (68° to 77° F) [see USP].

NADA #15-506, Approved by FDA

Manufactured for:

Pharmacia & Upjohn Company
Kalamazoo, Michigan 49001, USA

By SEARLE, LTD. Puerto Rico, Inc.
Barceloneta, P.R. 00617

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