TESTOSTERONE PROPIONATE 100

Test – Prop 100 – Testosterone Propionate USP 100mg
Ethyl Oleate q.s.
presented as 3x3ml cartridges per box (100mg/ml)

DESCRIPTION:
Test-Prop 100 (Testosterone Propionate injection, USP) provides testosterone propionate, an esterified derivative of the primary endogenous androgen testosterone for intramuscular use. In bioactive form, androgens have a 17-beta-hydroxy group, the esterification of which produces esters of testosterone which undergo hydrolysis in vivo; producing a delayed release of the bioactive testosterone. Each ml of Test Prop contains 100mg of testosterone propionate in ethyl oleate (base oil).

CLINICAL PHARMACOLOGY:

Endogenous androgens such as testosterone are responsible for the development and growth of the male sexual organs and post-adolescent secondary sex characteristics. Androgen effects include but are not limited to the maturation of the penis, scrotum, prostate, seminal tubules, laryngeal enlargement, vocal cord thickening, changes in muscle mass and fat distribution, and the development and distribution of male hair (facial, pubic, chest, back, axillary).

Androgens have been linked to increased protein anabolism and consequent decreased protein catabolism.

Androgens increase retention of sodium, potassium, and phosphorus. Androgens decrease urinary excretion of calcium.

Androgens are responsible for the growth spurt of adolescence and the aromatization of androgens to estrogens for the eventual termination of linear growth, which is brought about by fusion of the epiphyseal growth centers. In children, exogenous androgens accelerate linear growth rates but may cause a disproportionate advancement in bone maturation. Use over long periods may result in fusion of the epiphyseal growth centers and termination of the growth process. Androgens have been reported to stimulate the production of red blood cells by enhancing the production of erythropoietin stimulating factor.

Androgens may suppress gonadotrophic function of the pituitary. During exogenous administration of androgens, endogenous testosterone release is inhibited through feedback inhibition of pituitary luteinizing hormone (LH). With large doses, spermatogenesis may be suppressed through feedback inhibition of pituitary follicle stimulating hormone (FSH).

INDICATION AND USAGE:

Males: Androgen Replacement Therapy:

Test Prop is indicated for androgen replacement therapy in conditions associated with deficiency or absence of endogenous testosterone.

Primary hypogonadism: Testicular failure due to cryptorchidism, bilateral torsion, orchitis, vanishing testis syndrome, or orchiectomy.

Hypogonadotropic hypogonadism: Idiopathic gonadotropin or luteinizing hormone-releasing hormone (LHRH) deficiency, or pituitary-hypothalamic injury from tumors, trauma, or radiation.

Delayed puberty: Test Prop Injection may be used to stimulate puberty in carefully selected males with clearly delayed puberty that is not secondary to other pathological disorders.

Females: Metastatic mammary cancer: Test Prop Injection may be used secondarily in women with advancing inoperable metastatic mammary cancer who are one to five years post-menopausal. It has also been used in pre-menopausal women with breast cancer who have benefited from oophorectomy and are considered to have a hormone-responsive tumor.

Postpartum Breast Engorgement: as recommended by qualified physician.

CONTRAINDICATIONS:

1. Diagnosed or suspected carcinoma of the male breast or prostate.

2. Women who are pregnant or may become pregnant because of possible masculinization of the fetus. When administered to pregnant women, androgens cause virilization of the external genitalia of the female fetus. This virilization includes clitoromegaly, abnormal vaginal development, and fusion of genital folds to form a scrotal-like structure.

3. Patients with a history of hypersensitivity to Test-Prop or any of its components.

4. Patients with serious renal, cardiac, or hepatic dysfunction.

WARNINGS:

1. In breast cancer patients, androgen therapy may cause hypercalcemia through stimulated osteolysis. Frequent monitoring of urine and serum calcium is indicated in such patients. If hypercalcemia presents, the androgen should be discontinued.

2. Prolonged usage of high doses of androgens has been associated with peliosis hepatis, hepatic neoplasms, and hepatocellular carcinoma as well as azoospermia, oligospermia, and reduced ejaculatory volume.

3. If liver function tests become abnormal or the patient presents with cholestatic hepatitis with jaundice, androgen therapy should be discontinued pending determination of the etiology.

4. Edema due to sodium and water retention may be a serious complication in patients with pre-existing cardiac, renal, or hepatic disease, migraines, epilepsy, and other conditions. Edema may be increased in patients on concurrent adrenal cortical steroid or ACTH therapy.

5. Liver cell tumors have also been reported, most often benign and androgen-dependent, although fatal malignant tumors have also been reported. Termination of the drug generally results in regression or the cessation of tumor progression.

6. Geriatric patients receiving androgen therapy may be at increased risk for prostate hypertrophy and prostatic carcinoma.

7. Virilization of female patients may occur. If signs of virilization present during treatment of breast carcinoma, androgen therapy should be discontinued.

PRECAUTIONS:

Any nausea, vomiting, changes in skin color or ankle swelling should be monitored by a qualified physician, particularly in patients with a history of severe heart, liver, and kidney disease.

Androgen therapy patients receiving concurrent warfarin treatment may present with unexpected increases in the INR and/or pro-thrombin time (PT). When administered to these patients, the dosing of warfarin may need to be reduced significantly to maintain the desired INR level and reduce the risk of serious bleeding.

Because androgens may alter serum cholesterol concentration, caution should be used when administering these drugs to patients with a history of myocardial infarction or coronary artery disease.

Androgens may reduce clotting factors II, V, VII, and X, and may increase pro-thrombin time (PT). Patients should be instructed to report any use of warfarin and any irregular bleeding.

For Women: Women on androgen therapy should be observed for signs of virilization which may include the deepening of the voice, hirsutism, or clitoromegaly. Therapy should be discontinued upon signs of virilism to reduce the risk of irreversible virilization. Some virilizing effects may be irreversible after cessation of therapy even with concurrent administration of estrogens. Menstrual irregularities may also occur.

For Children:

Androgens should be used with caution in children and adolescents who are still growing because of possible premature epiphyseal closure in males and females, precocious sexual development in pre-pubertal males, or virilization in females. Skeletal maturation should be monitored at 6-month intervals by x-ray of the hand and wrist.

For Geriatrics:

Treatment of male patients over the age of approximately 50 years with androgens should be preceded by a thorough examination of the prostate and baseline measurement of serum prostate-specific antigen (PSA) concentration, since androgens may cause increased risk of prostate hypertrophy or may stimulate the growth of occult prostatic carcinoma. Periodic evaluation of prostate functions should also be performed during the course of therapy.

SIDE EFFECTS:

Males: Frequent or persistent penile erections and increases in the appearance of acne vulgaris.

Females: Hoarseness of the voice, acne, changes in menstrual periods, or more facial hair.

All patients: Nausea, vomiting, changes in

skin color, or ankle swelling.

Laboratory Tests and Patient Monitoring:

Examination of bone age by x-ray should be conducted during treatment of children to determine bone maturation rate and effect on epiphyseal centers.

Women with breast carcinoma should have frequent assays of serum and urine calcium throughout the course of treatment.

Androgens have been associated with increases in low-density lipoproteins and reduction in high-density lipoproteins in serum. Periodic serum lipid assays are recommended during treatment.

Serum assays for hematocrit and hemoglobin are recommended to screen for polycythemia in patients receiving large doses of androgens.

Hepatic function determinations should be made periodically including at a minimum AST and ALT, particularly with concomitant use of hepatotoxic medications or with a history of liver disease.

Androgen therapy patients, particularly those over 50 years of age, should be evaluated periodically for prostatic acid phosphatase and prostate specific antigen (PSA) total and free.

Total testosterone, free testosterone, and bioavailable testosterone in serum should assayed periodically and dosing titrated as necessary to achieve desired levels.

For treatment of breast carcinoma:

-Alkaline phosphatase serum values, physical examination, and x-rays of known or suspected metastases.

-Calcium

For gender change androgen therapy:

- LH (Luteinizing Hormone)

- ALT (Alkaline aminotransferase)

Thyroid Testing Interaction: Androgens have been shown to reduce concentration of thyroxine-binding globulin and consequently decreasing the total serum T4 and increasing uptake of both T3 and T4. Serum concentration of free (unbound) thyroid hormones will not change.

DRUG INTERACTIONS:

Anti-diabetic drugs and Insulin: In diabetic patients, the metabolic effects of androgens may reduce blood glucose, insulin, and anti-diabetic medication requirements.

Adrenal steroids or ACTH: May exacerbate edema in patients on concurrent adrenal-cortical steroids or ACTH therapy.

Anticoagulants: Patients on anticoagulants such as warfarin should be carefully monitored during androgen therapy as androgens may increase sensitivity to oral anticoagulants which may require a concomitant reduction in anticoagulant dosage to achieve a desirable prothrombin time (PT). Concurrent use of anti-diabetic agents, insulin, cyclosporines, hepatotoxic medications, and/or human growth hormone (somatropin) has been reported to decrease anticoagulant requirements. Anticoagulant patients should be monitored regularly during androgen therapy, particularly during initiation and termination of therapy.

Oxyphenbutazone: Elevated serum levels of oxyphenbutazone may result.

PREGNANCY AND LACTATION:

Pregnancy Category X

Pregnant women should not receive androgen therapy due to possible masculinization of the fetus.

It is not known whether anabolics are excreted in milk, but due to the harm the drug may give infants, a decision should be made by the nursing mother whether to continue the drug or not.

PEDIATRIC USE:

Androgen therapy should be used with extreme caution in pediatric patients. Use with children should be closely monitored by x-ray due to the potential for accelerating epiphyseal maturation and potentially compromising adult height.

ADVERSE REACTIONS:

GI/Hepatic: Nausea, peliosis hepatis, cholestatic jaundice, and very rarely hepatic necrosis. Hepatocellular neoplasms after long term use; May affect liver function tests.

CNS: Changes in libido, headache, habituation, excitation, generalized paresthesia, insomnia, anxiety and depression.

Hematological: Suppression of clotting factors II, V, VII, and X. Bleeding on concomitant anticoagulant therapy. Polycythemia.

Breast: Gynecomastia.

Larynx: Deepening of the voice in females.

Fluids and Electrolytes: Retention of electrolytes including sodium, potassium, chlorine, water, calcium, and inorganic phosphates.

Hair: Hirsutism and male pattern baldness (androgenetic alopecia)

Metabolic: Increased serum cholesterol

Skin: Acne vulgaris, flushing of the skin.

Skeletal: Premature closure of epiphyses in children.

Other: Rarely, anaphylactoid reactions; inflammation or pain at the injection site.

In males: Excessive frequency, duration, and persistence of penile erections. Gynecomastia, Priapism, Inhibition of gonadotrophin secretion, and Oligospermia at high doses.

In females: Virilization including clitoral enlargement, menstrual irregularities, amenorrhea, inhibition of gonadotrophin secretion, and deepening of the voice. In pregnant women, virilization of external genitalia of the female fetus.

DOSAGE AND ADMINISTRATION:

Male Androgen Replacement Therapy: Generally 25 to 50 mg injected intramuscularly (IM) 2 to 3 times per week. Titrate to desired serum levels.

Males with Delayed Puberty: Various dosage regimens have been used; some call for lower dosages initially with gradual increases as puberty progresses, with or without a change in maintenance levels. Other regimens call for higher dosages to induce pubertal changes and lower dosages for maintenance after puberty. The chronological and skeletal ages must be taken into consideration, both in determining the initial dose and in adjusting the dose. Dosage is generally within the lower ranges and only for a limited duration, for example, 4 to 6 months. X-rays should be taken at appropriate intervals to determine the amount of bone maturation and skeletal development (see INDICATIONS and WARNINGS).

Palliation of Mammary Cancer in Women: Generally a dosage of 50 to 100 mg is administered intramuscularly (IM) 3 times per week. Some physicians prefer short acting testosterone esters for treatment of breast carcinoma during the initiation of therapy for ease of titration and to better assess patient tolerance of the medication. Women with metastatic breast carcinoma must be followed closely because androgen therapy has been reported in rare instances to accelerate the disease.

Postpartum Breast Engorgement:

Generally 25 to 50 mg administered intramuscularly (IM) for 3 to 4 days beginning therapy at the time of delivery.

PRESENTATION:

100 mg/ml, 3 ml cartridges

STORAGE:

Store in a cool dry place (30 C± 2 C). Protect from light. Warming and rotating the vial between the palms of the hands will redissolve any crystals that may have formed during storage at low temperatures.