

The format of this leaflet was determined by the Ministry of Health and its content was checked and approved by it in July 2012

## PRESCRIBING INFORMATION

# PROVIRON

## Tablets

### COMPOSITION

Each tablet contains 25 mg mesterolone.

### ACTION

-dihydro-testosterone, which is  $\alpha$ -methyl compound of 5 $\alpha$ Mesterolone is the 1 considered to be the proper active androgen in many androgen-dependent target organs.

Proviron is an oral androgen preparation which has only a slight central inhibitory effect and, consequently, no restrictive effect on testicular function.

Proviron balances a deficiency of androgen formation which begins to fall gradually with increasing age. Therefore, Proviron is suitable for the treatment of all conditions caused by deficient endogenous androgen formation. In the recommended therapeutic dosage, Proviron will not impair spermatogenesis. Proviron is especially well tolerated by the liver.

### PHARMACOKINETICS AND METABOLISM

Following oral ingestion mesterolone is rapidly and almost completely absorbed in a wide dose range of 10 - 100 mg. The intake of Proviron generates maximum serum drug levels of  $3.1 \pm 1.1$  mg/ml after  $1.6 \pm 0.2$  hours. Thereafter drug levels in serum decrease with a terminal half-life of 12-13 hours. Mesterolone is bound to serum proteins by 98%. Binding to albumin accounts for 40% and binding to SHBG to 58%.

Mesterolone is rapidly inactivated by metabolism. The metabolic clearance rate from serum accounts for  $4.4 \pm 1.6$  ml. min<sup>-1</sup>.kg<sup>-1</sup>.

There is no renal excretion of unchanged drug. The main metabolite has been identified as 1 $\alpha$  - methyl-androsterone, which - in conjugated form - accounts for 55 - 70% of renally excreted metabolites. The ratio of main metabolite glucuronide to sulphate was about 12:1. As a further metabolite 1 $\alpha$  - methyl- 5 $\alpha$  androstane-3 $\alpha$ , 17 $\beta$ -diol has been recognized, which accounted for about 3% of renally eliminated metabolites. No metabolic conversion into estrogens or corticoids has been observed. In form of metabolites mesterolone is excreted by about 85% of dose with the urine and by about 14% of dose with the faeces. Within 7 days 93% of dose have been recovered in excreta, the half of which had been excreted within 24 hours.

The absolute bioavailability of mesterolone was determined to about 3% of the oral dose.

The daily intake of Proviron will lead to an about 30% increase in drug serum levels.

## INDICATIONS

Androgen deficiency or male infertility when associated with primary or secondary male hypogonadism.

### **Reduced efficiency in middle and advanced age** •

Complaints attributable to androgen-deficiency, such as reduced efficiency, easy fatigability, lack of concentration, weak memory, disturbances of libido and potency, irritability, disturbances of sleep, depressive moods, and general vegetative complaints, can be overcome or improved by the use of Proviron tablets.

### **Potency disturbances** •

Potency disorders based on an androgen deficiency are eliminated by administration of Proviron. If other factors are the sole cause or if they contribute to the disorders, Proviron may be administered in support of other therapeutic measures.

### **Hypogonadism** •

Growth, development and function of androgen-dependent target organs are stimulated by Proviron. It promotes development of secondary male sex characteristics in cases of prepuberal androgen-deficiency.

Proviron eliminates deficiency symptoms in cases where a loss of gonadal function has occurred postpuberally.

### **Infertility** •

Oligozoospermia and deficient Leydig-cell secretion may be the cause of infertility. With Proviron, sperm count and sperm quality as well as the fructose concentration in the ejaculate can be improved or normalized, thus increasing the chances of procreation.

## CONTRAINDICATIONS

Prostatic carcinoma.

Previous or existing liver tumours.

## WARNINGS

Androgens are not suitable for enhancing muscular development in healthy individuals or for increasing physical ability.

### **Risk of carcinoma** •

The occasionally expressed fear that prostatic carcinoma can be induced by the use of androgens is unfounded. Androgens have no carcinogenic action.

Observations made over many years have shown that the risk of carcinoma in men treated with androgens was no greater than in an untreated control group. Specific studies of male patients under long-term and high-dosed therapy with testosterone produced no signs of prostatic carcinoma and, hence, no evidence that the exogenous supply of testosterone activates any atypical cells which may be present.

The regular check-ups during the therapy failed to reveal a single case of carcinoma among patients with prostatic adenoma, whose complaints were favourably influenced by Proviron.

Since androgens can exacerbate a clinically manifest carcinoma of the prostate, malignant tumours of the prostate must be ruled out before the start of Proviron treatment. As in prophylactic examinations of men, regular rectal and - if required to confirm the diagnosis - biopsy examinations must be carried out during the therapy.

#### **Liver tumours** •

In rare cases, benign, and in even rarer cases, malignant liver tumours leading in isolated cases to life-threatening intra-abdominal haemorrhage have been observed after the use of hormonal substances such as the one contained in Proviron. A liver tumour should be included in the differential-diagnostic considerations if severe upper abdominal complaints, a liver enlargement or signs of an intra-abdominal haemorrhage occur. If necessary, the preparation must be withdrawn.

#### **ADVERSE REACTIONS**

Proviron is well tolerated even as regards liver function. Laboratory tests conducted during high-dosed and long-term treatment produced no evidence for an injurious effect. If, in individual cases, frequent or persistent erections occur, the dose should be reduced or the treatment discontinued in order to avoid injury to the penis.

#### **DRUG INTERACTIONS**

None recorded so far.

#### **DOSAGE AND ADMINISTRATION**

The tablets should be swallowed whole with some liquid.

The following dosages are recommended:

#### **Reduced efficiency and potency disturbances:** •

*Commencement of treatment:*

1 Proviron tablet 3 times per day.

After satisfactory clinical improvement, it can be tried to reduce the dose.

*Continuation of treatment:*

1 Proviron tablet twice or once per day.

According to the type and severity of the complaints, the dose for further treatment is to be adjusted to individual requirements. Continuous treatment over a period of several months is recommended.

**Hypogonadism requires continuous therapy:** •

For development of secondary male sex characteristics, 1 - 2 Proviron tablets 3 times per day for several months.

As maintenance dose, 1 Proviron tablet 2 - 3 times per day will often be sufficient.

**Infertility - for the improvement of sperm quantity and quality:** •

1 Proviron tablet 2 - 3 times per day for a cycle of spermatogenesis, i.e. for about 90 days. If necessary, Proviron treatment is to be repeated after an interval of several weeks.

To achieve a higher fructose concentration in the ejaculate in cases of postpuberal Leydig-cell insufficiency: 1 Proviron tablet twice per day over several months.

**OVERDOSAGE**

Acute toxicity studies using single administration showed that Proviron is to be classified as practically non-toxic. No risk of toxicity is to be expected even after inadvertent single administration of a multiple of the dose required for therapy.

**PRESENTATION**

Blisters of 50 tablets.

**EXCIPIENTS**

lactose monohydrate, maize starch, polyvidone 25,000, magnesium stearate, methyl-4-hydroxybenzoate, propyl-4-hydroxybenzoate

**STORAGE**

No special storage conditions are required.

**MANUFACTURER**

Bayer Weimar GmbH und CO.KG., Germany

**REGISTRATION HOLDER**

Bayer Israel LTD., 36 Hacharash St., Hod Hasharon 45244