

## **SUMMARY OF PRODUCT CHARACTERISTICS**

### **1 NAME OF THE MEDICINAL PRODUCT**

Progesterone 100 mg Soft Capsules

### **2 QUALITATIVE AND QUANTITATIVE COMPOSITION**

Each capsule contains 100 mg micronised progesterone.

Excipient with known effect: Soybean lecithin

Each soft capsule contains: 1 mg soybean lecithin

For a full list of excipients, see section 6.1.

### **3 PHARMACEUTICAL FORM**

Capsules, soft (capsules)

Off white opaque, round shape soft gelatin capsules containing off white to white coloured suspension

### **4 CLINICAL PARTICULARS**

#### **4.1 Therapeutic indications**

Progesterone is indicated for adjunctive use with oestrogen in post-menopausal women with an intact uterus, as hormone replacement therapy (HRT).

#### **4.2 Posology and method of administration**

### Posology

In women receiving estrogen replacement therapy there is an increased risk of endometrial cancer which can be countered by progesterone administration.

The recommended dose is 200 mg daily at bedtime, for twelve days in the last half of each therapeutic cycle (beginning on Day 15 of the cycle and ending on Day 26). Withdrawal bleeding may occur in the following week.

Alternatively 100 mg can be given at bedtime from Day 1 to Day 25 of each therapeutic cycle, withdrawal bleeding being less with this treatment schedule.

For initiation and continuation of treatment of postmenopausal symptoms, the lowest effective dose for the shortest duration (see also Section 4.4) should be used.

### *Paediatric population*

There is no relevant use of Progesterone in pre-pubescent children.

### *Older people*

As for adults.

### Method of Administration

Oral

Progesterone 100 mg Soft Capsules should not be taken with food and should be taken at bedtime.

Concomitant food ingestion increases the bioavailability of progesterone.

## **4.3 Contraindications**

When used in conjunction with estrogens, Progesterone should not be used in patients with any of the following conditions:

- Hypersensitivity to the active substance, soya, peanut (see Section 4.4) or to any of the excipients listed in section 6.1
- Known, past or suspected breast cancer
- Known or suspected hormone-dependent malignant tumours (e.g. endometrial cancer)
- Undiagnosed vaginal (genital) bleeding
- Untreated endometrial hyperplasia
- Previous or current thromboembolism (e.g. deep venous thrombosis, pulmonary embolism, thromboembolic disorders) or thrombophlebitis
- Known thrombophilic disorders (e.g. protein C, protein S, or antithrombin deficiency, see section 4.4.)

- Active or recent arterial thromboembolic disease (e.g., angina pectoris, myocardial infarction)
- Acute liver disease, or a history of liver disease as long as liver function tests have failed to return to normal
- Porphyria
- Cerebral haemorrhage has been observed with synthetic progestogens
- Breast-feeding (see section 4.6)

#### **4.4 Special warnings and precautions for use**

Progesterone is not suitable as a contraceptive and must only be used in accordance with the indications in Section 4.1.

##### Warnings

For the treatment of postmenopausal symptoms, HRT should only be initiated for symptoms that adversely affect quality of life. In all cases, a careful appraisal of the risks and benefits should be undertaken at least annually, and HRT should only be continued as long as the benefit outweighs the risk.

Evidence regarding the risks associated with HRT in the treatment of premature menopause is limited. Due to the low level of absolute risk in younger women, however, the balance of benefits and risks for these women may be more favourable than in older women.

##### Precautions

##### **Medical examination/follow-up**

Before initiating or reinstating HRT, a complete personal and family medical history should be taken. Physical (including pelvic and breast) examination should be guided by this and by the contraindications and warnings for use. During treatment, periodic check-ups are recommended of a frequency and nature adapted to the individual woman. Women should be advised what changes in their breasts should be reported to their doctor or nurse (see 'Breast cancer' below).

Investigations, including appropriate imaging tools, *e.g.* mammography, should be carried out in accordance with currently accepted screening practices, modified to the clinical needs of the individual.

##### **Conditions which need supervision**

If any of the following conditions are present, have occurred previously, and/or have been aggravated during pregnancy or previous hormone treatment, the patient should be closely supervised. It should be taken into account that these conditions may recur or be aggravated during treatment with Progesterone 100 mg Capsules, in particular:

- Leiomyoma (uterine fibroids) or endometriosis

- Risk factors for thromboembolic disorders (see below)
- Risk factors for estrogen dependent tumours, e.g. 1st degree heredity for breast cancer
- Hypertension
- Liver disorders (e.g. liver adenoma)
- Diabetes mellitus with or without vascular involvement
- Cholelithiasis
- Migraine or (severe) headache
- Systemic lupus erythematosus.
- A history of endometrial hyperplasia (see below)
- Epilepsy
- Asthma
- Otosclerosis
- Fluid retention (e.g. cardiac disease, renal disease)
- Depression
- Photosensitivity

#### **Reasons for immediate withdrawal of therapy**

Therapy should be discontinued in case a contraindication is discovered and in the following situations:

- Jaundice or deterioration in liver function
- Significant increase in blood pressure
- New onset of migraine-type headache
- Pregnancy
- Sudden or gradual, partial or complete loss of vision
- Venous or thrombotic thromboembolic accidents regardless of the territory
- Proptosis or diplopia
- Papilloedema
- Retinal vascular lesions

#### **Endometrial hyperplasia and carcinoma**

In women with an intact uterus the risk of endometrial hyperplasia and carcinoma is increased when estrogens are administered alone for prolonged periods. The reported increase in endometrial cancer risk among estrogen-only users varies from 2-to 12-fold greater compared with non-users, depending on the duration of treatment and estrogen dose (see section 4.8). After stopping treatment risk may remain elevated for at least 10 years.

The addition of progesterone for at least 12 days per month/28 day cycle or continuous combined estrogen-progestogen therapy in non-hysterectomised women prevents the excess risk associated with estrogen-only HRT.

Breakthrough bleeding and spotting may occur during the first months of treatment. If breakthrough bleeding persists, a lower dose of Progesterone for 25 days per cycle could be considered (see section 4.2).

If breakthrough bleeding or spotting appears after some time on therapy, or continues after treatment has been discontinued, the reason should be investigated, which may include endometrial biopsy to exclude endometrial malignancy.

### **Breast cancer**

The overall evidence suggests an increased risk of breast cancer in women taking combined estrogen-progestogen and possibly also estrogen-only HRT, that is dependent on the duration of taking HRT.

#### **Combined estrogen-progestogen therapy**

- The randomised placebo-controlled trial the (Women's Health Initiative study (WHI), and epidemiological studies are consistent in finding an increased risk of breast cancer in women taking combined estrogen-progestogen for HRT that becomes apparent after about 3 years (see Section 4.8).

The excess risk becomes apparent within a few years of use but returns to baseline within a few (at most five) years after stopping treatment.

HRT, especially estrogen-progestogen combined treatment, increases the density of mammographic images which may adversely affect the radiological detection of breast cancer.

### **Ovarian cancer**

Ovarian cancer is much rarer than breast cancer. Epidemiological evidence from a large meta-analysis suggests a slightly increased risk in women taking estrogen-only or combined estrogen-progestogen HRT, which becomes apparent within 5 years of use and diminishes over time after stopping. Some other studies, including the WHI trial, suggest that use of combined HRTs may be associated with a similar or slightly smaller risk (see Section 4.8).

### **Venous thromboembolism**

HRT is associated with a 1.3-3 fold risk of developing venous thromboembolism (VTE), *i.e.* deep vein thrombosis or pulmonary embolism. The occurrence of such an event is more likely in the first year of HRT than later (see Section 4.8).

Patients with known thrombophilic states have an increased risk of VTE and HRT may add to this risk. HRT is therefore contraindicated in these patients (see section 4.3).

Generally recognised risk factors for VTE include, use of estrogens, older age, major surgery, prolonged immobilisation, obesity (BMI > 30 kg/m<sup>2</sup>), pregnancy/postpartum period, systemic lupus erythematosus (SLE), and cancer. There is no consensus about the possible role of varicose veins in VTE.

As in all postoperative patients, prophylactic measures need be considered to prevent VTE following surgery. If prolonged immobilisation is to follow elective surgery temporarily stopping HRT 4 to 6 weeks earlier is recommended. Treatment should not be restarted until the woman is completely mobilised.

In women with no personal history of VTE but with a first degree relative with a history of thrombosis at young age, screening may be offered after careful counselling regarding its limitations (only a proportion of thrombophilic defects are identified by screening).

If a thrombophilic defect is identified which segregates with thrombosis in family members or if the defect is 'severe' (*e.g.* antithrombin, protein S, or protein C deficiencies or a combination of defects) HRT is contraindicated.

Women already on chronic anticoagulant treatment require careful consideration of the benefit-risk of use of HRT.

If VTE develops after initiating therapy, the drug should be discontinued. Patients should be told to contact their doctors immediately when they are aware of a potential thromboembolic symptom (*e.g.* painful swelling of a leg, sudden pain in the chest, dyspnoea).

### **Coronary artery disease (CAD)**

There is no evidence from randomised controlled trials of protection against myocardial infarction in women with or without existing CAD who received combined estrogen-progestogen or estrogen-only HRT.

#### **Combined estrogen-progestogen therapy**

- The relative risk of CAD during use of combined estrogen+progestogen HRT is slightly increased. As the baseline absolute risk of CAD is strongly dependent on age, the number of extra cases of CAD due to estrogen+progestogen use is very low in healthy women close to menopause, but will rise with more advanced age.

### **Ischaemic stroke**

Combined estrogen-progestogen and estrogen-only therapy are associated with an up to 1.5-fold increase in risk of ischaemic stroke. The relative risk does not change with age or time since menopause. However, as the baseline risk of stroke is strongly age-dependent, the overall risk of stroke in women who use HRT will increase with age (see section 4.8).

### **Other conditions**

HRT use does not improve cognitive function. There is some evidence of increased risk of probable dementia in women who start using continuous combined or estrogen-only HRT after the age of 65.

**Progesterone 100 mg Soft Capsules contain soybean lecithin** and may cause hypersensitivity reactions (urticarial and anaphylactic shock in hypersensitive patients). As there is a possible relationship between allergy to soya and allergy to peanut, patients with peanut allergy should avoid using Progesterone 100 mg Soft Capsules.

Progesterone 100 mg Soft Capsules contain highly refined oil, for which the incidence of hypersensitivity is very rare in adults.

#### **4.5 Interaction with other medicinal products and other forms of interaction**

Progestogens may affect the treatment balance of diabetes and have been linked to an increase in Type 2 diabetes. The diabetes medicine of patients being treated simultaneously with progestogens may need to be adjusted (see section 4.4).

##### *Effects which progesterone may have on other medicines*

Progesterone may:

- Enhance or weaken the anti-coagulating effect of coumarins and prevent the anti-coagulating effect of phenindione
- Prevent the metabolism of ciclosporin, which increases the concentration of ciclosporin in plasma and the risk of toxicity
- Increase the concentration of tizanidine in plasma
- Interfere with the effect of bromocriptine
- Enhance the arrhythmogenicity of bupivacaine
- Alter the results of liver and/or endocrine function tests
- Prevent the oxidation of some benzodiazepine derivatives such as diazepam, chlordiazepoxide and alprazolam and to induce glucuronidation of oxazepam and lorazepam. These synergistic effects are probably not clinically significant, because the therapeutic spectrum of benzodiazepines is wide.

##### *Interaction of other medicines on progesterone*

The following medicines may increase the metabolism of progesterone:

- Perampanel or topiramate
- Some antibiotics, such as ampicillin, amoxicillin and tetracyclines may lower the concentration of steroids in plasma, because these antibiotics can have an effect on the hydrolysis of steroid conjugates in the bowel and on the reabsorption of non-conjugated steroid, in which case the concentration of the active steroid in the bowel will be reduced.

- Rifampicin and rifabutin
- Epilepsy medicines (not valproic acid): phenytoin, phenobarbital, carbamazepine, eslicarbazepine, oxcarbazepine and primidone/rufinamide (by inducing oxidative decomposition)
- Herbal medicinal products, which contain St John's wort (*Hypericum perforatum*)
- Antiretroviral medicines (protease blockers): darunavir, nelfinavir, fosamprenavir, lopinavir
- Bosentan
- Aprepitant.

The following medicines may prevent the metabolism of progesterone, which will lead to an increase in the bioavailability of progesterone:

- Antifungal medicines (fluconazole, itraconazole, ketoconazole, voriconazole)
- Immunosuppressants (tacrolimus)
- Statins (atorvastatin, rosuvastatin)
- Monoamine oxidase (MAO) inhibitors (selegiline).

## 4.6 Fertility, pregnancy and lactation

### Pregnancy

If pregnancy occurs during medication, Progesterone 100 mg Soft Capsules should be withdrawn immediately.

Clinically, data on a large number of exposed pregnancies indicate no adverse effects of progesterone on the foetus. The results of most epidemiological studies to date relevant to inadvertent foetal exposure to combinations of estrogens + progesterone indicate no teratogenic or foetotoxic effect.

Prescription of progesterone beyond the first trimester of pregnancy may reveal gravidic cholestasis.

### Breast-feeding

Progesterone 100 mg Soft Capsules are not indicated during breast-feeding (see section 4.3). Detectable amounts of progesterone enter the breast milk.

### Fertility

Not relevant

## 4.7 Effects on ability to drive and use machines

This medicine may cause drowsiness or dizziness therefore care should be taken when driving or using machines. Taking the capsules at bedtime helps to avoid these drawbacks.

## 4.8 Undesirable effects

### a. Summary of the safety profile

#### Post-Marketing experience

The information given below is based on extensive post marketing experience, from oral administration of progesterone.

Adverse effects have been ranked under headings of frequency using the following convention: very common ( $\geq 1/10$ ); common ( $\geq 1/100$ ;  $< 1/10$ ); uncommon ( $\geq 1/1,000$ ;  $< 1/100$ ); rare ( $\geq 1/10,000$ ;  $< 1/1,000$ ); very rare ( $< 1/10,000$ ); frequency not known (cannot be estimated from the available data).

System organ class	Common ( $\geq 1/100$ ; $< 1/10$ )	Uncommon ( $\geq 1/1,000$ ; $< 1/100$ );	Rare ( $\geq 1/10,000$ ; $< 1/1,000$ )	Very rare ( $< 1/10,000$ )	Frequency Not known (cannot be estimated from the available data)
Infections and infestations					Urinary tract infections, Vaginitis
Blood and lymphatic disorders		Thromboembolic disorders			Anaemia.
Metabolism and nutrition disorders	Weight fluctuation	Fluid retention	Change in glucose tolerance		
Psychiatric disorders	Insomnia	Agitation, Anxiety, Apathy, Depression, Disorientation, Mood swings, Nervousness	Change in libido		
Nervous system disorders	Dizziness, Headache, Somnolence	Amnesia, Migraine, Paraesthesia,			

<b>System organ class</b>	<b>Common (≥1/100; &lt;1/10)</b>	<b>Uncommon (≥1/1,000; &lt;1/100);</b>	<b>Rare (≥1/10,000; &lt;1/1,000)</b>	<b>Very rare (&lt;1/10,000)</b>	<b>Frequency Not known (cannot be estimated from the available data)</b>
		Speech disorder, Syncope			
Eye disorders		Visual Disturbance	Eye irritation		
Ear and labyrinth disorders		Tinnitus, Vertigo			
Cardiac disorders		Palpitations, Tachycardia			
Vascular disorders		Haemorrhage, Hot flush, Hypotension  Thrombotic events (mainly when taken in combination with estrogen),			
Respiratory, thoracic and mediastinal disorders		Dyspnoea			
Gastrointestinal disorders	Abdominal distension, Abdominal pain, Nausea	Constipation, Diarrhoea, Vomiting	Loss of appetite		Taste disturbances
Hepatobiliary disorders		Non-severe and reversible liver disorders  Cholestatic jaundice			
Skin and subcutaneous tissue disorders	Pruritus	Acne, Alopecia, Erythema, Hyperhidrosis, Rash, Urticaria		Chloasma	

<b>System organ class</b>	<b>Common (≥1/100; &lt;1/10)</b>	<b>Uncommon (≥1/1,000; &lt;1/100);</b>	<b>Rare (≥1/10,000; &lt;1/1,000)</b>	<b>Very rare (&lt;1/10,000)</b>	<b>Frequency Not known (cannot be estimated from the available data)</b>
Musculoskeletal and connective tissue disorders		Arthralgia, Back pain, Limb discomfort, Muscle spasms, Myalgia			
Renal and urinary disorders			Dysuria		
Reproductive system and breast disorders	Intermenstrual bleeding, Vaginal haemorrhage  Menstruation irregular, Amenorrhoea, Metrorrhagia  Breast pain and breast tenderness  Breakthrough bleeding or irregular withdrawal bleeding	Abnormal withdrawal bleeding, Breast discomfort Endometrial hyperplasia, Vaginal discharge, Vulvovaginal discomfort, Menstrual cycle abnormal, Mastodynia Hirsutism			Dysmenorrhoea, Cervical erosion, Cervical secretions
Immune system disorders			Anaphylactoid reactions		
General disorders and administration site conditions	Fatigue Malaise	Asthenia, Chest discomfort, Chest pain, Oedema			Pyrexia

b. Description of selected adverse reactions

Somnolence or transient dizziness may occur 1 to 3 hours after intake of the drug.  
Bedtime dosing and reduction of the dose may reduce these effects.

The following risks apply in relation to systemic estrogen/progestogen treatment:

### **Breast cancer risk**

- An up to 2-fold increased risk of having breast cancer diagnosed is reported in women taking combined estrogen-progestogen therapy for more than 5 years.
- Any increased risk in users of estrogen-only therapy is substantially lower than that seen in users of estrogen-progestogen combinations.
- The level of risk is dependent on the duration of use (see section 4.4).
- Results of the largest randomised placebo-controlled trial (WHI-study) and largest epidemiological study (MWS) are presented.

### **Million Women study– Estimated additional risk of breast cancer after 5 years’ use**

Age range (years)	Additional cases per 1000 never- users of HRT over a 5 year period* <sup>2</sup>	Risk ratio & 95 %CI#	Additional cases per 1000 HRT users over 5 years (95 %CI)
<b>Estrogen only HRT</b>			
50 - 65	9 - 12	1.2	1 - 2 (0 - 3)
<b>Combined estrogen-progestogen</b>			
50 - 65	9 -12	1.7	6 (5 -7 )
<p>#Overall risk ratio. The risk ratio is not constant but will increase with increasing duration on use            Note: Since the background incidence of breast cancer differs by EU country, the number of additional cases of breast cancer will also change proportionately.</p> <p><sup>2</sup> *Taken from baseline incidence rates in developed countries</p>			

### **US WHI studies - additional risk of breast cancer after 5 years’ use**

Age range (years)	Incidence per 1000 women in placebo arm over 5 years	Risk ratio & 95 %CI	Additional cases per 1000 HRT users over 5 years (95%CI)
<b>CEE estrogen-only</b>			
50 - 79	21	0.8 (0.7 – 1.0)	-4 (-6 – 0)* <sup>3</sup>
<b>CEE+MPA estrogen &amp; progestogen‡</b>			
50 - 79	17	1.2 (1.0 – 1.5)	+4 (0 – 9)
<p>‡When the analysis was restricted to women who had not used HRT prior to the study there was no increased risk apparent during the first 5 years of treatment: after 5 years the risk was higher than in non-users.</p> <p><sup>3</sup> *WHI study in women with no uterus, which did not show an increase in risk of breast cancer</p>			

### **Endometrial cancer risk**

#### Postmenopausal women with a uterus.

The endometrial cancer risk is about 5 in every 1000 women with a uterus not using HRT.

In women with a uterus, use of estrogen-only HRT is not recommended because it increases the risk of endometrial cancer (see section 4.4).

Depending on the duration of estrogen-only use and estrogen dose, the increase in risk of endometrial cancer in epidemiology studies varied from between 5 and 55 extra cases diagnosed in every 1000 women between the ages of 50 and 65.

Adding progesterone to estrogen-only therapy for at least 12 days per cycle can prevent this increased risk. In the Million Women Study (MWS) the use of five years of combined (sequential or continuous) HRT did not increase risk of endometrial cancer (RR of 1.0 (0.8 - 1.2)).

**Ovarian cancer**

Use of estrogen-only and combined estrogen-progestogen HRT has been associated with a slightly increased risk of having ovarian cancer diagnosed (see section 4.4).

A meta-analysis from 52 epidemiological studies reported an increased risk of ovarian cancer in women currently using HRT compared to women who have never used HRT (HRT RR 1.43, 95 % CI 1.31 - 1.56). For women aged 50 to 54 years taking 5 years of HRT, this results in about 1 extra case per 2000 users. In women aged 50 to 54 who are not taking HRT, about 2 women in 2000 will be diagnosed with ovarian cancer over a 5-year period.

**Risk of venous thromboembolism**

HRT is associated with a 1.3 - 3-fold increased relative risk of developing venous thromboembolism (VTE), i.e. deep vein thrombosis or pulmonary embolism. The occurrence of such an event is more likely in the first year of using HT (see section 4.4). Results of the WHI studies are presented:

**WHI Studies - Additional risk of VTE over 5 years' use**

Age range (years)	Incidence per 1000 women in placebo arm over 5 years	Risk ratio & 95 % CI	Additional cases per 1000 HRT users
<b>Oral estrogen-only*<sup>4</sup></b>			
50 - 59	7	1.2 (0.6 – 2.4)	1 (-3 – 10)
<b>Oral combined estrogen-progestogen</b>			
50 - 59	4	2.3 (1.2 – 4.3)	5 (1 – 13)
<sup>4</sup> *Study in women with no uterus			

**Risk of coronary artery disease**

- The risk of coronary artery disease is slightly increased in users of combined estrogen-progestogen HRT over the age of 60 (see section 4.4).

**Risk of ischaemic stroke**

- The use of estrogen-only and estrogen + progestogen therapy is associated with an up to 1.5 fold increased relative risk of ischaemic stroke. The risk of haemorrhagic stroke is not increased during use of HRT.
- This relative risk is not dependent on age or on duration of use, but as the baseline risk is strongly age-dependent, the overall risk of stroke in women who use HRT will increase with age, see section 4.4.

**WHI studies combined - Additional risk of ischaemic stroke\*<sup>5</sup> over 5 years' use**

Age range (years)	Incidence per 1000 women in placebo arm over 5 years	Risk ratio & 95 % CI	Additional cases per 1000 HRT users
50 - 59	8	1.3 (1.1 – 1.6)	3 (1 – 5)
<sup>5</sup> *no differentiation was made between ischaemic and haemorrhagic stroke.			

The following adverse reactions have also been reported in association with systemic estrogen/progestogen treatment:

- Rash
- Urticaria
- Chloasma/melasma
- Pyrexia
- Insomnia
- Alopecia
- Irregular menstruation
- Amenorrhoea
- Breast pain/mastodynia
- Fluid retention/oedema
- Weight changes
- Changes in libido
- Hirsutism
- Depression
- Gall bladder disease
- Probable dementia over the age of 65 (see section 4.4)
- Skin and subcutaneous disorders: erythema multiforme, erythema nodosum, vascular purpura.

Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal

product. Healthcare professionals are asked to report any suspected adverse reactions via the Yellow Card Scheme Website: [www.mhra.gov.uk/yellowcard](http://www.mhra.gov.uk/yellowcard) or search for MHRA Yellow Card in the Google Play or Apple App Store.

## **4.9 Overdose**

### *Symptoms*

High doses of progesterone may cause drowsiness, somnolence, or fatigue.

### *Treatment*

Treatment of overdosage consists of discontinuation of Progesterone together with institution of appropriate symptomatic and supportive care.

## **5 PHARMACOLOGICAL PROPERTIES**

### **5.1 Pharmacodynamic properties**

Pharmacotherapeutic group: Sex hormones and modulators of the genital system;

Progestogens;Pregnen-(4) derivatives

ATC code: G03DA04

#### Mechanism of action

Progesterone is a natural progestogen, the main hormone of the corpus luteum and the placenta. It acts on the endometrium by converting the proliferating phase to the secretory phase. Progesterone 100 mg Soft Capsules have all the properties of endogenous progesterone, in particular gestagenic, antiestrogenic, slightly anti-androgenic and antialdosterone effects.

#### Clinical efficacy and safety

As estrogens promote the growth of the endometrium, unopposed estrogens increase the risk of endometrial hyperplasia and cancer. The addition of progesterone greatly reduces the estrogen-induced risk of endometrial hyperplasia in non-hysterectomised women.

### **5.2 Pharmacokinetic properties**

### Absorption

Micronised progesterone is absorbed by the digestive tract. Pharmacokinetic studies conducted in healthy volunteers have shown that after oral administration of 2 capsules (200 mg), plasma progesterone levels increased to reach the  $C_{max}$  of 13.8 ng/ml +/- 2.9 ng/ml in 2.2 +/- 1.4 hours. The elimination half-life observed was 16.8 +/- 2.3 hours.

### Distribution

Progesterone is approximately 96% - 99% bound to serum proteins, primarily to serum albumin (50% - 54%) and transcortin (43% - 48%).

### Elimination

Urinary elimination is observed for 95 % in the form of glycucoconjugated metabolites, mainly 3  $\alpha$ , 5  $\beta$ -pregnanediol (pregnandiol).

### Biotransformation

Progesterone is metabolised primarily by the liver. The main plasma metabolites are 20  $\alpha$  hydroxy-  $\Delta$  4  $\alpha$ - prenolone and 5  $\alpha$ -dihydroprogesterone. Some progesterone metabolites are excreted in the bile and these may be deconjugated and further metabolised in the gut via reduction, dehydroxylation and epimerisation. The main plasma and urinary metabolites are similar to those found during the physiological secretion of the corpus luteum.

### Linearity/non-linearity

The pharmacokinetics of micronized progesterone is independent of the dose administered. Although there were some inter-individuals variations, the same individual pharmacokinetic characteristics were maintained over several months permitting appropriate individual adaptation of the posology and indicating predictable responses to the drug.

### *Older people*

As per adults above

## **5.3 Preclinical safety data**

Nonclinical data revealed no special hazard for humans based on conventional studies of safety pharmacology, repeated dose toxicity, genotoxicity, carcinogenic potential, toxicity to reproduction and development.

## **6 PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

Sunflower oil, refined

Soybean lecithin (E322)

#### **Capsule shell**

Gelatin (E441)

Glycerol (E422)

Titanium dioxide (E171)

Purified water

### **6.2 Incompatibilities**

Not applicable.

### **6.3 Shelf life**

48 months.

### **6.4 Special precautions for storage**

Do not store above 25°C.

### **6.5 Nature and contents of container**

The product is supplied in clear PVC/PVDC/Aluminium blisters contained in cartons.

Pack size: 30 and 60 capsules.

Not all pack sizes are marketed.

## **6.6 Special precautions for disposal**

Any unused product or waste material should be disposed of in accordance with local requirements.

## **7 MARKETING AUTHORISATION HOLDER**

Flamingo Pharma (UK) Limited  
1st Floor, Kirkland House  
11-15 Peterborough Road, Harrow  
Middlesex, HA1 2AX  
United Kingdom

## **8 MARKETING AUTHORISATION NUMBER(S)**

PL 43461/0151

## **9 DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION**

03/09/2025

## **10 DATE OF REVISION OF THE TEXT**

03/09/2025