PRODUCT INFORMATION

PUREGON®

NAME OF THE MEDICINE

PUREGON contains Follitropin beta. [Recombinant human follicle-stimulating hormone (recFSH)]

DESCRIPTION

Packs of clear glass cartridges containing PUREGON solution for injection, designed for sub-cutaneous injection using a pen injector.

Qualitative and Quantitative Composition

PUREGON contains the active ingredient, follitropin beta (rch). This is produced by a Chinese hamster ovary cell line transfected with the human FSH subunit genes (i.e., by recombinant-DNA technology). One cartridge contains either 0.270 mL equal to a net dose of 150 IU*, 0.480 mL equal to a net dose of 300 IU, 0.840 mL equal to a net dose of 600 IU or 1.230 mL equal to a net dose of 900 IU.

List of excipients

PUREGON solution also contains sucrose, sodium citrate, methionine, polysorbate 20 and benzyl alcohol in water for injections. The pH may have been adjusted with sodium hydroxide and/or hydrochloric acid.

PHARMACOLOGY

Pharmacodynamic properties

Pharmacotherapeutic group: gonadotrophins; ATC code: G03G A06.

PUREGON contains follitropin beta, a recombinant human FSH. FSH is indispensable in normal gamete growth and maturation, and gonadal steroid production.

In the female: The amount of FSH is critical for the onset and duration of follicular development, and consequently for the timing and number of follicles reaching maturity. PUREGON can thus be used to stimulate follicular development and steroid production in selected cases of disturbed gonadal function.

Furthermore PUREGON can be used to promote multiple follicular development in medically assisted reproduction programs [e.g. in vitro fertilisation/embryo transfer (IVF/ET), gamete or zygote intra-fallopian transfer (GIFT/ZIFT)].

In the absence of an endogenous LH surge, treatment with PUREGON is generally followed by administration of hCG to induce the final phase of follicle maturation, leading to ovulation.

In the male: In deficient spermatogenesis due to hypogonadotrophic hypogonadism, PUREGON is given to substitute FSH for the stimulation of the Sertoli cells. The high LH activity needed to stimulate the Leydig cells is provided by an hCG preparation given in addition.

Pharmacokinetic properties

After subcutaneous administration of PUREGON, high concentrations of follitropin beta are reached within about 12 hours. Due to the sustained release from the injection site, and the relatively long elimination half-life of about 40 hours (ranging from 12 to 70 hours), follitropin beta levels remain high for 24-48 hours.

Due to the relatively long elimination half-life, after repeated administration, plasma concentrations of follitropin beta are approximately 1.5-2.5 times higher than after single administration. This increase contributes to reach therapeutic follitropin beta FSH concentrations.

Since follitropin beta [recombinant FSH] is very similar to endogenous FSH, it is expected that it would be distributed, metabolised, and excreted in the same way.

A bioequivalence study was performed to compare the pharmacokinetics of FSH after subcutaneous single-dose injection of PUREGON with a conventional syringe as dissolved freeze-dried cake (2 x 75 IU) versus administration of PUREGON Solution (150 IU) with pen-injector.

Due to the precision of the device, it can be assumed that exactly 150 IU was injected with the Peninjector. The dose injected with the syringe was actually lower than the anticipated 150 IU, which is due to losses while filling the syringe and/or removing excess air and to the void volume of the syringe. After correction of the dose by a factor of 1.18, bioequivalence was demonstrated for all relevant pharmacokinetic parameters (see Table below). Since the daily dose of PUREGON is determined by the patient's individual ovarian response, the slightly higher dose delivered by the Pen is unlikely to affect clinical outcome. The following table shows the main pharmacokinetic results of the study:

Parameter	Pen injector (n=20)	Syringe (n=20)	Point estimate	90% CI	Outcome
AUC _{0-∞} (IU/L.h)	215.1	220.3	1.01	0.93-1.10	bioequivalent
Cmax (IU/L)	3.36	3.43	1.00	0.91-1.11	bioequivalent
CI app (L/h/kg)	0.0117	0.0122	0.99	0.91-1.08	bioequivalent

INDICATIONS

In the female:

Anovulatory infertility and;

Controlled ovarian hyperstimulation to induce the development of multiple follicles in medically assisted reproduction programs (e.g. in vitro fertilisation and related procedures).

In the male:

For the treatment of deficient spermatogenesis due to hypogonadotrophic hypogonadism.

CONTRAINDICATIONS

- Hypersensitivity to the active substance or any of the excipients.
- Tumours of ovarium, breasts, uterus, testes, hypo-thalamus and pituitary gland.
- Pregnancy and during lactation.
- Unexplained vaginal bleeding.
- Ovarian cysts or enlarged ovaries, not related to polycystic ovarian disease (PCOD).
- PUREGON is contraindicated when an effective response cannot be obtained, such as:
 - primary ovarian failure such as indicated by high levels of FSH.
 - organic disorders of the reproductive organs incompatible with pregnancy such as congenital malformations of the uterus and fibroids.
- Any condition in which a pregnancy (including multiple pregnancy) would be particularly hazardous (eg. extremes of weight disorders and uterine abnormalities).
- Primary testicular failure.
- PUREGON should not be used in the elderly or in children.

PRECAUTIONS

- Before starting treatment, the couple's infertility should be assessed as appropriate. In particular, patients should be evaluated for hypothyroidism, adrenocortical insufficiency, hyperprolactinemia and pituitary or hypothalamic tumours, and appropriate specific treatment given.
- Prior to treating patients for inadequate gonadal function, the following should be assessed:
 - i. Careful clinical examination to determine general, pelvic or genital pathology.
 - ii. Serum gonadotrophin levels concentrations to exclude gonadal failure.
 - iii. Thyroid function, serum prolactin to exclude endocrinopathies that may be responsible.
 - iv. A semen analysis of the partner.
- Ovarian torsion has been reported after treatment with gonadotrophins, including PUREGON.
 Ovarian torsion may be associated with other risk factors such as Ovarian Hyperstimulation
 Syndrome (OHSS), pregnancy, previous abdominal surgery, past history of ovarian torsion,
 previous or current ovarian cyst and polycystic ovaries. Damage to the ovary due to reduced blood
 supply can be limited by early diagnosis and immediate detorsion.
- Multiple pregnancies and births have been reported for all gonadotrophin treatments, including PUREGON. Multiple gestations, especially high order, carry an increased risk of adverse maternal (pregnancy and delivery complications) and perinatal (low birth weight) outcomes. For anovulatory women undergoing ovulation induction, monitoring follicular development with transvaginal ultrasonography is important for minimising the risk of multi-foetal gestations. The concurrent determination of serum oestradiol levels may also be useful. The parents should be advised of the potential risks of multiple births before starting treatment.

In women undergoing Assisted Reproductive Technologies (ART) procedures, the risk of a multiple pregnancy is mainly related to the number of embryos transferred. When used for an ovulation induction cycle, appropriate FSH dose adjustment(s) should prevent multiple follicle development.

- The first injection of PUREGON should be performed under direct medical supervision.
- Infertile women undergoing ART, have an increased incidence of ectopic pregnancies. Early ultrasound confirmation that a pregnancy is intrauterine is therefore important.
- The incidence of congenital malformations after ART may be slightly higher than after spontaneous conceptions. This slightly higher incidence is thought to be related to differences in parental characteristics (e.g. maternal age, sperm characteristics) and to the higher incidence of multiple gestations after ART. Analysis of pooled data does not indicate that the use of gonadotrophins in ovulation induction and medically assisted reproduction programs carries an increased risk of congenital malformations.
- There have been reports of ovarian and other reproductive system neoplasms, both benign and
 malignant, in women who have undergone multiple drug regimens for infertility treatment. It is not
 established whether or not treatment with gonadotrophins increases the risk of these tumours in
 infertile women.
- PUREGON would not be expected to be effective in the absence of endogenous luteinising hormone (LH). The presence of spontaneous or progestogen withdrawal menstruation is suggestive of adequate endogenous LH.
- Thromboembolic events, both in association with and separate from OHSS, have been reported following treatment with gonadotrophins, including PUREGON. Intravascular thrombosis, which may originate in venous or arterial vessels, can result in reduced blood flow to vital organs or the extremities. In women with generally recognised risk factors for thromboembolic events, such as personal or family history, severe obesity or thrombophilia, treatment with gonadotrophins, including PUREGON, may further increase this risk. In these women the benefits of gonadotrophin administration, including PUREGON, need to be weighed against the risks. It should be noted however that pregnancy itself also carries an increased risk of thrombosis.

- PUREGON may contain traces of streptomycin and/or neomycin. These antibiotics may cause hypersensitivity reactions in susceptible persons.
- Elevated endogenous FSH levels in men are indicative of primary testicular failure. Such patients are unresponsive to PUREGON /hCG therapy.
- In men, semen analysis is recommended 4 to 6 months after the beginning of treatment in assessing the response.
- Medical conditions that contraindicate pregnancy should be evaluated before starting treatment with PUREGON.

Overstimulation of the Ovary during PUREGON therapy

Ovarian enlargement: Mild to moderate uncomplicated ovarian enlargement which may be accompanied by abdominal distension and/or abdominal pain occurs in approximately 20% of those treated with PUREGON and hCG and generally regresses without treatment within two or three weeks.

In order to minimise the hazard associated with the occasional abnormal ovarian enlargement which may occur with PUREGON -hCG therapy, the lowest dose consistent with expectation of good results should be used. Careful monitoring of ovarian response can further minimise the risk of overstimulation.

If the ovaries are abnormally enlarged on the last day of PUREGON therapy, hCG should not be administered in this course of therapy; this will reduce the chances of development of the Ovarian Hyperstimulation Syndrome.

The Ovarian Hyperstimulation Syndrome (OHSS): OHSS is a medical event distinct from uncomplicated ovarian enlargement. OHSS may progress rapidly to become a serious medical event. It is characterised by an apparent dramatic increase in vascular permeability which can result in a rapid accumulation of fluid in the peritoneal cavity, thorax and potentially, the pericardium. Clinical signs and symptoms of mild and moderate OHSS are abdominal pain, nausea, diarrhoea, mild to moderate enlargement of ovaries and ovarian cysts. Severe OHSS may be life-threatening. Clinical signs and symptoms of severe OHSS are large ovarian cysts, acute abdominal pain, ascites, pleural effusion, hydrothorax, dyspnoea, oliquria, haematological abnormalities and weight gain. In rare instances, venous or arterial thromboembolism may occur in association with OHSS. Transient liver function test abnormalities suggestive of hepatic dysfunction with or without morphologic changes on liver biopsy have also been reported in association with OHSS. The early warning signs of development of OHSS are severe pelvic pain, nausea, vomiting and weight gain. The following symptomatology has been seen with cases of OHSS: abdominal pain, abdominal distension, gastrointestinal symptoms including nausea, vomiting and diarrhoea, severe ovarian enlargement, weight gain, dyspnoea and oliguria. Clinical evaluation may reveal hypovolaemia haemo-concentration, electrolyte imbalances, ascites, haemoperitoneum, pleural effusions, hydrothorax, acute pulmonary distress and thromboembolic events (see Pulmonary and Vascular Complications).

OHSS may be caused by administration of human chorionic gonadotrophin (hCG) and by pregnancy (endogenous hCG). Early OHSS usually occurs within 10 days after hCG administration and may be associated with an excessive ovarian response to gonadotrophin stimulation. Late OHSS occurs more than 10 days after hCG administration, as a consequence of the hormonal changes with pregnancy. Because of the risk of developing OHSS, patients should be monitored for at least two weeks after hCG administration. OHSS occurs uncommonly in patients when the recommended dose is administered and is more common in patients when higher than recommended doses are administered. Cases of OHSS are more common, more severe and more protracted if pregnancy occurs. Most often, OHSS occurs after treatment has been discontinued and reaches its maximum at about seven to ten days following treatment. Usually, OHSS resolves spontaneously with the onset of menses. If there is evidence that OHSS may be developing prior to hCG administration, the hCG should be withheld.

Women with known risk factors for a high ovarian response may be especially prone to the development of OHSS during or following treatment with PUREGON. For women having their first cycle of ovarian stimulation, for whom risk factors are only partially known, close observation for early signs and symptoms of OHSS is recommended.

To reduce the risk of OHSS, ultrasound assessments of follicular development should be performed prior to treatment and at regular intervals during treatment. The concurrent determination of serum oestradiol levels may also be useful. In ART there is an increased risk of OHSS with 18 or more follicles of 11 mm or more in diameter. When there are 30 or more follicles in total it is advised to withhold hCG administration.

Depending on the ovarian response, the following measures can be considered to reduce the risk of OHSS:

- withhold further stimulation with a gonadotrophin for a maximum of 3 days (coasting);
- withhold hCG and cancel the treatment cycle;
- administer a dose lower than 10,000 IU of urinary hCG for triggering final oocyte maturation, e.g., 5,000 IU urinary hCG or 250 micrograms rec-hCG (which is equivalent to approximately 6,500 IU of urinary hCG);
- cancel the fresh embryo transfer and cryopreserve embryos;
- · avoid administration of hCG for luteal phase support.

If OHSS develops, standard and appropriate management of OHSS should be implemented and followed.

If OHSS occurs, treatment should be stopped and the patient hospitalised. Treatment is primarily symptomatic, consisting of bed rest, fluid and electrolyte management and analgesics if needed. The phenomenon of haemoconcentration associated with fluid loss into the peritoneal cavity, pleural cavity and the pericardial cavity has been seen to occur and should be thoroughly assessed in the following manner: 1) fluid intake and output, 2) weight, 3) haematocrit, 4) serum and urinary electrolytes, 5) urine specific gravity, 6) BUN and creatinine, and 7) abdominal girth. These determinations are to be performed daily or more often if the need arises.

With OHSS there is an increased risk of injury to the ovary. The ascitic, pleural and pericardial fluid should not be removed unless absolutely necessary to relieve symptoms such as pulmonary distress or cardiac tamponade. Pelvic examination may cause rupture of an ovarian cyst, which may result in haemoperitoneum, and should therefore be avoided. If this does occur, and if bleeding becomes such that surgery is required, the surgical treatment should be designed to control bleeding and to retain as much ovarian tissue as possible. Intercourse should be prohibited in those patients in whom significant ovarian enlargement occurs after ovulation because of the danger of haemoperitoneum resulting from ruptured ovarian cysts.

The management of OHSS may be divided into three phases: an acute, a chronic, and a resolution phase. Because the use of diuretics can accentuate the diminished intravascular volume, diuretics should be avoided except in the late phase of resolution as described below.

Acute Phase: Management during the acute phase should be designed to prevent haemoconcentration due to loss of intravascular volume to the third space and to minimise the risk of thromboembolic phenomena and kidney damage. Treatment is designed to normalise electrolytes while maintaining an acceptable but somewhat reduced intra vascular volume. Full correction of the intravascular volume deficit may lead to an unacceptable increase in the amount of third space fluid accumulation. Management includes administration of limited intravenous fluids, electrolytes, and human serum albumin. Monitoring for the development of hyperkalaemia is recommended.

Chronic Phase: After stabilising the patient during the acute phase, excessive fluid accumulation in the third space should be limited by instituting severe potassium, sodium and fluid restriction.

Resolution Phase: A fall in haematocrit and an increasing urinary output without an increased intake are observed due to the return of third space fluid to the intravascular compartment. Peripheral and/or pulmonary oedema may result if the kidneys are unable to excrete third space fluid as rapidly as it is mobilised. Diuretics may be indicated during the resolution phase if necessary to combat pulmonary oedema.

Pulmonary and Vascular Complication

Serious pulmonary conditions (e.g. atelectasis, acute respiratory distress syndrome) have been reported. In addition, thromboembolic events both in association with, and separate from the Ovarian Hyperstimulation Syndrome are possible following PUREGON therapy. Intravascular thrombosis, which may originate in venous or arterial vessels, can result in reduced blood flow to vital organs or the extremities. Sequelae of such events have included venous thrombophlebitis, pulmonary embolism,

pulmonary infarction, cerebral vascular occlusion (Stroke) and arterial occlusion resulting in loss of limb. In rare cases, pulmonary complications and/or thromboembolic events could result in death.

Multiple Births

In the majority of patients, the pregnancies following treatment with PUREGON resulted in single births. For patients undergoing IVF treatment the risk of multiple pregnancy following assisted reproductive technologies is related to the number of oocytes/embryos replaced, in other patients the incidence of multiple pregnancies is increased by PUREGON, as with other agents used to stimulate ovulation. However, the majority of multiple conceptions are twins.

Pregnancy loss is higher than that in the normal population, but comparable with the rates found in women with other fertility problems.

Carcinogenicity and mutagenicity

Long-term studies in animals have not been performed to evaluate the carcinogenic potential of follitropin beta. Follitropin beta showed no genotoxic activity in a series of assays performed to evaluate its potential to cause gene mutations (*Salmonella typhimurium* and *E coli*) and chromosomal damage (human lymphocytes in vitro).

Use in pregnancy

Category B2: Follitropin beta is not intended for use during pregnancy (see Contraindications). There are no available data from studies in which PUREGON was administered to pregnant animals. In case of inadvertent exposure during pregnancy, clinical data are not sufficient to exclude a teratogenic effect of recombinant FSH.

Use in lactation

It is not known whether follitropin beta is excreted in human milk. Because many drugs are excreted in human milk and because of the potential for serious adverse reactions in the nursing infant from PUREGON, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Interaction with other medicines

Concurrent use of PUREGON and clomiphene may enhance the follicular response. After pituitary desensitisation effected by a GnRH agonist, a higher dose of PUREGON may be necessary to elicit an adequate follicular response.

Effects on ability to drive and use machines

As far as known this medicine has no influence on alertness and powers of concentration.

Incompatibilities: No relevant incompatibilities are known.

ADVERSE REACTIONS

Unwanted ovarian hyperstimulation, ovarian hyperstimulation syndrome: Signs and symptoms of ovarian hyperstimulation syndrome were reported in 3% of women treated with PUREGON in clinical trials.

Multiple pregnancy (including higher order multiplets than twins).

Body System Disorders:

%	Body system (WHO system-organ class)	PUREGON [®] n = 1074	Metrodin (Urinary FSH) n = 498	
Nausea 0.5 0.8 Abdominal Pain Other 3.0 3.4 Reproductive disorders, female (2) 5.2 4.0 Hyperstimulation Syndrome 2.2 3.4 Ectopic Pregnancy 3.0 3.2 Abdominal Pain 3.0 3.2 Vaginal Haemorrhage 1.1 0.3 Foetal disorders 3.1 4.2 Miscarriage 3.1 4.2 Body as a whole-general disorders 0.5 0.2 Pain 0.2 0.2 Influenza -like symptoms 0.2 0.2 Swollen Abdomen 0.6 0.6		%	%	
Abdominal Pain Other Reproductive disorders, female (2) Hyperstimulation Syndrome Ectopic Pregnancy Abdominal Pain Vaginal Haemorrhage Foetal disorders Miscarriage Body as a whole-general disorders Pain Influenza -like symptoms Swollen Abdomen 0.1 3.0 3.4 4.0 2.2 3.4 3.0 3.2 1.1 0.3 4.2 5.2 4.0 4.0 3.4 4.0 3.4 4.0 3.1 4.2 5.2 5.2 4.0 4.0 3.4 4.0 3.4 4.0 3.4 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2 5.2	•	0.5	0.8	
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Seproductive disorders, female (2)			*	
Hyperstimulation Syndrome		3.0	0.4	
Abdominal Pain 3.0 3.2 3.4 3.2 3.0 3.2 3.4 3.2 3.0 3.2 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5		5.2	4.0	
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Swollen Abdomen 0.2 0			0.2	
103	· .		-	
	Other	0.3	0.6	
	Application site disorders	1.0	0.6	

⁽¹⁾ a subject can have adverse experiences in more than one body system.

Application Site Disorders:

Bruising*, pain, redness, swelling, itching.

(*in one study of 195 women undergoing superovulation for IVF, comparing intramuscular and subcutaneous routes of administration no differences between the two routes of administration were significant apart from bruising which was more common in the subcutaneous group).

Generalised hypersensitivity reactions which may include erythema, urticaria, rash and pruritus have been observed uncommonly.

In the Female:

Headache (in up to 1.0% of the women treated with PUREGON).

Ovarian torsion has been reported (see PRECAUTIONS).

In rare instances, thromboembolism has been associated with PUREGON/hCG treatment as with other gonadotrophins.

Characteristic symptoms of ovarian hyperstimulation and the ovarian hyperstimulation syndrome are included under PRECAUTIONS.

Adverse effects related to the hyperstimulation syndrome are breast complaints, (including breast tenderness, pain and/or engorgement (uncommonly)) and ovarian enlargement.

In the Male:

Occasionally gynecomastia and acne may occur during PUREGON /hCG therapy. These are known effects of hCG treatment.

DOSAGE AND ADMINISTRATION

Treatment with PUREGON should be initiated under the supervision of a physician experienced in the treatment of fertility problems.

Dosage in the female:

Anovulation / defective follicle ripening and/or corpus luteum insufficiency

There are great inter-and intra-individual variations in the response of the ovaries to exogenous gonadotrophins. This makes it impossible to set a uniform dosage scheme. The dosage should, therefore,

⁽²⁾ for this category the number of female patients is used.

be adjusted individually depending on the ovarian response. This requires ultrasound assessment of follicular development. The concurrent determination of serum oestradiol levels may also be useful.

In general, a sequential treatment scheme is recommended. This starts with daily administration of 75-150 IU FSH. This dose is maintained for 5-7 days. If there is no apparent ovarian response, the daily dose is gradually increased until oestrogen levels start to rise.

A daily ascent rate of 40-100 % is considered to be optimal. The daily effective dose is then maintained until pre-ovulatory conditions are reached. If oestrogen levels rise too rapidly, i.e. more than a daily doubling for 2 or 3 consecutive days, the daily dose should be decreased.

Pre-ovulatory conditions are reached when plasma oestradiol levels of 300-900 picogram/mL (1000-3000 pmol/L), or a total urinary oestrogen excretion of 75-200 microgram (250-650 nmol)/24 hours are attained, and/or when there is ultrasonographic evidence of a dominant follicle of at least 18 mm in diameter. The administration of PUREGON is then discontinued and ovulation can be induced by administering human chorionic gonadotrophin (hCG) in a dose of 5000-10 000 IU. Two to three injections of 1000-3000 IU hCG each may be given within the following 9 days to prevent insufficiency of the corpus luteum.

Since follicles of over 15mm may produce pregnancies, a maximum of two additional follicles exceeding 15 mm is acceptable. If this limit is exceeded, hCG should be withheld and pregnancy should be avoided in order to prevent large multiple gestations.

In women with polycystic ovarian disease, induction of a hypogonadotrophic state by a GnRH agonist before and during treatment with PUREGON may result in better pregnancy rates than without the use of an agonist.

Controlled ovarian hyperstimulation in medically assisted reproduction programs Various stimulation protocols are applied. Stimulation of follicular growth is generally achieved by daily administration of 75-300 IU FSH. PUREGON can be given either alone, or in combination with clomiphene citrate to stimulate the endogenous production of gonadotrophins, or in combination with a GnRH agonist, in particular to prevent premature luteinization.

Maturation of follicles is monitored by ultrasound assessment. The concurrent determination of serum oestradiol levels may also be useful. When ultrasound assessment indicates the presence of at least three follicles of 16-20 mm, and there is evidence of a good oestradiol response (plasma levels of about 300-400 picogram/mL (1000-1300 pmol/L) for each follicle with a diameter greater than 18 mm), the final phase of maturation of the follicles is induced 30-40 hours after the last administration of PUREGON by administration of hCG in a dose of 5000-10000 IU oocyte retrieval is performed 34-35 hours later.

After embryo transfer, up to three repeat injections of 1000 to 3000 IU hCG each may be given within the following 9 days to provide luteal phase support.

Dosage in the male:

75 IU FSH injections are given daily or 2-3 times a week. These injections should be combined with a simultaneous dose of 1000-2000 IU hCG, 2-3 times a week to make up the necessary LH activity. This treatment should be continued for at least three months before any improvement in spermatogenesis can be expected. During this treatment testosterone replacement therapy should be suspended. Once achieved, the improvement may in some cases be maintained by hCG alone.

Paediatric Population:

There is no relevant indication for use of PUREGON in children.

Method of administration

PUREGON solution for injection in cartridges has been developed for use in the PUREGON Pen and should be administered subcutaneously. The injection site should be alternated to prevent lipoatrophy.

Using the pen, injection of PUREGON can be carried out by the patient or partner, provided proper instructions are given by the physician. Self-administration of PUREGON should only be performed by women who are well-motivated, adequately trained and with access to expert advice.

Do not use if the solution contains particles or if the solution is not clear.

Empty cartridges must not be refilled. PUREGON cartridges are not designed to allow any other drug to be mixed in the cartridges.

OVERDOSAGE

The acute toxicity of gonadotrophin preparations has been shown to be very low. However, too high a dosage for more than one day may lead to hyperstimulation of the ovaries (see Unwanted Hyperstimulation, under PRECAUTIONS).

PRESENTATION AND STORAGE CONDITIONS

PUREGON 150IU/0.18mL* solution for injection in clear glass cartridge with rubber stoppers. Each cartridge contains 0.270mL of PUREGON solution. The extractable volume contains 150 IU of follitropin beta rch. AUST R No. 116842

PUREGON 300IU/0.36mL solution for injection in clear glass cartridge with rubber stoppers. Each cartridge contains 0.480 mL of PUREGON solution. The extractable volume contains 300 IU of follitropin beta rch. AUST R No. 76436

PUREGON 600IU/0.72mL solution for injection in clear glass cartridge with rubber stoppers. Each cartridge contains 0.840mL of PUREGON solution. The extractable volume contains 600 IU of follitropin beta rch. AUST R No. 76437

PUREGON 900IU/1.08mL solution for injection in clear glass cartridge with rubber stoppers. Each cartridge contains 1.230mL of PUREGON solution. The extractable volume contains 900 IU of follitropin beta rch. AUST R No. 116843

* Not marketed

Protect from light.

Pharmacy - store at 2°C to 8°C (refrigerate, do not freeze) until expiry date on carton.

Patient- store at 2°C to 8°C (refrigerate, do not freeze) until expiry date on carton, or alternatively store below 25°C for a maximum of 3 months

The product should not be kept above 25°C, refrigerate if necessary.

After commencement of use, PUREGON may be stored below 25°C (do not freeze) for a maximum of 28 days. Each cartridge is for individual patient use only.

POISON SCHEDULE OF THE MEDICINE

Prescription

NAME AND ADDRESS OF SPONSOR

Merck Sharp & Dohme (Australia) Pty Limited Level 1, Building A, 26 Talavera Road Macquarie Park NSW 2113 Australia

Merck Sharp & Dohme (New Zealand) Ltd P O Box 99 851 Newmarket

DATE OF FIRST INCLUSION IN THE AUSTRALIAN REGISTER OF THERAPEUTIC GOODS

5 March 2009

DATE OF MOST RECENT AMENDMENT

17 December 2014