

# Summary of Product Characteristics

## 1 NAME OF THE MEDICINAL PRODUCT

Cabaser 1 mg Tablet

## 2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each tablet contains 1mg of cabergoline.

Excipients with known effect:

Each tablet also contains 75.4mg of anhydrous lactose.

For the full list of excipients, see Section 6.1.

## 3 PHARMACEUTICAL FORM

Tablets

White, oval, both sides concave tablets, one side scored and engraved "7" on the left of the breakline and "01" on the right of it. The tablet can be divided into equal halves

## 4 CLINICAL PARTICULARS

### 4.1 Therapeutic indications

Treatment of Parkinson's disease

If treatment with a dopamine agonist is being considered, cabergoline is indicated as second line therapy in patients who are intolerant or fail treatment with a non-ergot compound, as monotherapy, or as adjunctive treatment to levodopa plus dopa-decarboxylase inhibitor, in the management of the signs and symptoms of Parkinson's disease.

Treatment should be initiated under specialist supervision. The benefit of continued treatment should be regularly reassessed taking into account the risk of fibrotic reactions and valvulopathy (see sections 4.3, 4.4 & 4.8).

### 4.2 Posology and method of administration

Cabergoline is for oral administration. Since the tolerability of dopaminergic agents is improved when administered with food, it is recommended that cabergoline be taken with meals.

Cabergoline is intended for chronic, long term treatment.

Adults and elderly patients

As expected for dopamine agonists, dose response for both efficacy and side effects appears to be linked to individual sensitivity. Optimization of dose should be obtained through slow initial dose titration, from starting doses of 1 mg daily. The dosage of concurrent levodopa may be gradually decreased, while the dosage of cabergoline is increased, until the optimum balance is determined. In view of the long half-life of the compound, increments of the daily dose of 0.5-1 mg should be done at weekly (initial weeks) or bi-weekly intervals, up to optimal doses.

The recommended therapeutic dosage is 2 to 3 mg/day for patients with signs and symptoms of Parkinson's disease. Cabergoline should be given as a single daily dose.

Paediatric population

The safety and efficacy of cabergoline has not been investigated in children as Parkinson's disease does not affect this population.

### 4.3 Contraindications

Hypersensitivity to cabergoline or to any of the excipients listed in section 6.1, or any ergot alkaloid.

History of pulmonary, pericardial and retroperitoneal fibrotic disorders.

For long-term treatment: Evidence of cardiac valvulopathy as determined by pre-treatment echocardiography. (see section 4.4).

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

##### General:

As with other ergot derivatives, cabergoline should be given with caution to patients with severe cardiovascular disease, Raynaud's syndrome, peptic ulcer or gastrointestinal bleeding, or with a history of serious, particularly psychotic, mental disorders.

Patients with rare hereditary problems of galactose intolerance, the Lapp lactase deficiency or glucose-galactose malabsorption should not take this medicine.

The effects of alcohol on overall tolerability of cabergoline are currently unknown.

##### Renal Insufficiency:

No overall differences in the pharmacokinetics of cabergoline were observed in 12 patients having moderate (creatinine clearance 31-60 ml/min) to severe (creatinine clearance 8-26 ml/min) renal disease. The pharmacokinetics of cabergoline in these patients were similar to those of healthy volunteers as expected, since only a small fraction of cabergoline is eliminated renally. The pharmacokinetics of cabergoline has not been studied in patients having end-stage renal failure, or in patients on haemodialysis; these patients should be treated with caution.

##### Hepatic Insufficiency:

Lower doses of cabergoline should be considered in patients with severe hepatic insufficiency. Compared to normal volunteers and those with lesser degrees of hepatic insufficiency, an increase in AUC has been seen in patients with severe hepatic insufficiency (Child-Pugh Class C) who received a single 1 mg dose.

##### Postural Hypotension:

Postural hypotension can occur following administration of cabergoline, particularly during the first days of administration of cabergoline. Care should be exercised when administering cabergoline concomitantly with other drugs known to lower blood pressure.

##### Fibrosis and cardiac valvulopathy and possibly related clinical phenomena:

Fibrotic and serosal inflammatory disorders such as pleuritis, pleural effusion, pleural fibrosis, pulmonary fibrosis, pericarditis, pericardial effusion, cardiac valvulopathy involving one or more valves (aortic, mitral and tricuspid) or retroperitoneal fibrosis have occurred after prolonged usage of ergot derivatives with agonist activity at the serotonin 5HT<sub>2B</sub> receptor, such as cabergoline.

In some cases, symptoms or manifestations of cardiac valvulopathy improved after discontinuation of cabergoline.

Erythrocyte sedimentation rate (ESR) has been found to be abnormally increased in association with pleural effusion/fibrosis. Chest x-ray examination is recommended in cases of unexplained ESR increases to abnormal values.

Serum creatinine measurements can also be used to help in the diagnosis of fibrotic disorder. Following diagnosis of pleural effusion/pulmonary fibrosis or valvulopathy, the discontinuance of Cabaser has been reported to result in improvement of signs and symptoms. (see section 4.3)

Valvulopathy has been associated with cumulative doses, therefore, patients should be treated with the lowest effective dose. At each visit, the risk benefit profile of cabergoline treatment for the patient should be reassessed to determine the suitability of continued treatment with cabergoline.

##### Before initiating long-term treatment:

All patients must undergo a cardiovascular evaluation, including echocardiogram, to assess the potential presence of asymptomatic valvular disease. It is also appropriate to perform baseline investigations of erythrocyte sedimentation rate or other inflammatory markers, lung function/chest x-ray and renal function prior to initiation of therapy.

In patients with valvular regurgitation, it is not known whether cabergoline treatment might worsen the underlying disease. If fibrotic valvular disease is detected, the patient should not be treated with cabergoline (see section 4.3).

During long-term treatment:

Fibrotic disorders can have an insidious onset and patients should be regularly monitored for possible manifestations of progressive fibrosis.

Therefore during treatment, attention should be paid to the signs and symptoms of:

- Pleuro-pulmonary disease, such as dyspnoea, shortness of breath, persistent cough, or chest pain.
- Renal insufficiency or ureteral/abdominal vascular obstruction that may occur with pain in the loin/flank, and lower limb oedema, as well as any possible abdominal masses or tenderness that may indicate retroperitoneal fibrosis.
- Cardiac failure: cases of valvular and pericardial fibrosis have often manifested as cardiac failure.
- Therefore, valvular fibrosis (and constrictive pericarditis) should be excluded if such symptoms occur.

Clinical diagnostic monitoring for development of fibrotic disorders, as appropriate, is essential. Following treatment initiation, the first echocardiogram should occur within 3-6 months; thereafter, the frequency of echocardiographic monitoring should be determined by appropriate individual clinical assessment with particular emphasis on the above-mentioned signs and symptoms, but must occur at least every 6 to 12 months.

Cabergoline should be discontinued if an echocardiogram reveals new or worsened valvular regurgitation, valvular restriction, valve leaflet thickening or fibrotic valvular disease (see section 4.3).

The need for other clinical monitoring (e.g. physical examination including, cardiac auscultation, X-ray, CT scan) should be determined on an individual basis.

Additional appropriate investigations such as erythrocyte sedimentation rate, and serum creatinine measurements should be performed if necessary to support a diagnosis of a fibrotic disorder.

Symptomatic hypotension can occur following administration of cabergoline: particular attention should be paid when administering cabergoline concomitantly with other drugs known to lower blood pressure. Because of its elimination half-life hypotensive effects may persist for a few days after cessation of therapy.

Somnolence/Sudden Sleep Onset:

Cabergoline has been associated with somnolence and episodes of sudden sleep onset in patients with Parkinson's disease. Sudden onset of sleep during daily activities, in some cases without awareness or warning signs, has been reported. Patients must be informed of this and advised to exercise caution while driving or operating machines during treatment with cabergoline. Patients who have experienced somnolence and/or an episode of sudden sleep onset must refrain from driving or operating machines. Furthermore a reduction in dosage or termination of therapy may be considered. (see section 4.7)

Impulse control disorders:

Patients should be regularly monitored for the development of impulse control disorders. Patients and carers should be made aware that behavioural symptoms of impulse control disorders including pathological gambling, increased libido, hypersexuality, compulsive spending or buying, binge eating and compulsive eating can occur in patients treated with dopamine agonists including Cabaser. Dose reduction/tapered discontinuation should be considered if such symptoms develop.

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

The concomitant use of antiparkinson non-dopamine agonists (e.g. selegiline, amantadine, biperiden, trihexyphenidyl) was allowed in clinical studies for patients receiving cabergoline. In studies where the pharmacokinetic interactions of cabergoline with L-dopa or selegiline were evaluated, no interactions were observed.

No information is available about interaction between cabergoline and other ergot alkaloids; therefore the concomitant use of these medications during long term treatment with cabergoline is not recommended.

Since cabergoline exerts its therapeutic effect by direct stimulation of dopamine receptors, it should not be concurrently administered with drugs which have dopamine-antagonist activity (such as phenothiazines, butyrophenones, thioxanthenes, metoclopramide) since these might reduce the therapeutic effect of cabergoline.

As with other ergot derivatives, cabergoline should not be used in association with macrolide antibiotics (e.g. erythromycin) due to increased systemic bioavailability.

#### 4.6 Fertility, pregnancy and lactation

There are no adequate and well-controlled studies from the use of cabergoline in pregnant women. Animal studies have not demonstrated teratogenic effects, but reduced fertility and embryo-toxicity were observed in association with pharmacodynamic activity (see section 5.3).

In a twelve year observational study on pregnancy outcomes following cabergoline therapy, information is available on 256 pregnancies. Seventeen of these 256 pregnancies (6.6%) eventuated in major congenital malformations or abortion. Information is available on 23/258 infants who had a total of 27 neonatal abnormalities, both major and minor. Musculoskeletal malformations were the most common neonatal abnormality (10), followed by cardio-pulmonary abnormalities (5). There is no information on perinatal disorders or long-term development of infants exposed to intra-uterine cabergoline. Based on recent published literature, the prevalence of major congenital malformations in the general population has been reported to be 6.9% or greater. Rates of congenital abnormality vary between different populations. It is not possible to accurately determine if there is an increased risk as no control group was included.

It is recommended that contraception is used whilst on treatment with cabergoline.

Cabergoline should only be used during pregnancy if clearly indicated and after an accurate benefit/risk evaluation.

Due to the long half-life of the drug and limited data on in utero exposure, women planning to become pregnant should discontinue cabergoline one month before intended conception. If conception occurs during therapy, treatment should be discontinued as soon as pregnancy is confirmed to limit foetal exposure to the drug.

In rats cabergoline and/or its metabolites are excreted in milk. No information is available on excretion in breast milk in humans; however, lactation is expected to be inhibited/suppressed by cabergoline, in view of its dopamine-agonist properties. Mothers should be advised not to breast-feed while being treated with cabergoline.

#### 4.7 Effects on ability to drive and use machines

Patients should be careful when performing actions which require fast and accurate reaction during treatment initiation.

Patients being treated with cabergoline and presenting with somnolence and/or sudden sleep onset episodes must be informed to refrain from driving or engaging in activities where impaired alertness may put themselves or others at risk of serious injury or death (e.g. operating machines) until such episodes and somnolence have resolved (see section 4.4).

#### 4.8 Undesirable effects

The following undesirable effects have been observed and reported during treatment with cabergoline with the following frequencies: Very common ( $\geq 1/10$ ); common ( $\geq 1/100$  to  $< 1/10$ ); uncommon ( $\geq 1/1,000$  to  $\leq 1/100$ ); rare ( $\geq 1/10,000$  to  $\leq 1/1,000$ ); very rare ( $\leq 1/10,000$ ), not known (cannot be estimated from the available data).

| MedDRA System Organ Class                                   | Frequency   | Undesirable Effects  |
|---|-------------|--|
| <b>Cardiac disorders</b>                                    | Very Common | Valvulopathy (including regurgitation) and related disorders (pericarditis and pericardial effusion)         |
|   | Common*     | Angina pectoris  |
| <b>Respiratory, thoracic and mediastinal disorders</b>      | Common      | Dyspnea  |
|   | Uncommon    | Pleural effusion, pulmonary fibrosis   |
|   | Very rare   | Fibrosis (including pleural fibrosis)  |
|   | Not Known   | Respiratory disorder, respiratory failure, pleuritis, chest pain   |
| <b>Immune system disorders</b>                              | Uncommon    | Hypersensitivity reaction  |
| <b>Nervous system disorders</b>                             | Common      | Headache, somnolence, dizziness/vertigo, dyskinesia  |
|   | Uncommon    | Hyperkinesia   |
|   | Not Known   | Sudden sleep onset, syncope, tremor  |
| <b>Eye disorders</b>  | Not Known   | Visual impairment  |
| <b>Psychiatric disorders</b>                                | Common      | Hallucinations, sleep disturbances, increased libido, confusion  |
|   | Uncommon    | Delusions, psychotic disorder  |
|   | Not Known   | Aggression, hypersexuality, pathological gambling  |
| <b>Vascular disorders</b>                                   | Common      | Cabergoline generally exerts a hypotensive effect in patients on long-term treatment; Postural hypotension   |
|   | Uncommon    | Erythromelalgia  |
|   | Not Known   | Digital vasospasm  |
| <b>Gastrointestinal disorders</b>                           | Very common | Nausea   |
|   | Common      | Constipation, dyspepsia, gastritis, vomiting   |
| <b>General disorders and administration site conditions</b> | Very common | Peripheral oedema  |
|   | Common      | Asthenia   |
|   | Uncommon    | Oedema, fatigue  |
| <b>Hepato-biliary disorders</b>                             | Uncommon    | Hepatic function abnormal  |
| <b>Skin and subcutaneous tissue disorders</b>               | Uncommon    | Rash   |
|   | Not Known   | Alopecia   |
| <b>Musculoskeletal and connective tissue disorders</b>      | Not Known   | Leg cramps   |
| <b>Investigations</b>                                       | Common      | Liver function tests abnormal, decreased haemoglobin, haematocrit, and/or red blood cell (> 15% vs baseline) |
|   | Not Known   | Blood creatinine phosphokinase increased   |

\* When concomitant use with levodopa

#### Impulse control disorders

Pathological gambling, increased libido, hypersexuality, compulsive spending or buying, binge eating and compulsive eating can occur in patients treated with dopamine agonists including Cabaser (see section 4.4).

#### 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 HPRC Pharmacovigilance, Earlsfort Terrace, IRL - Dublin 2; Tel: +353 1 6764971; Fax: +353 1 6762517. Website: [www.hpra.ie](http://www.hpra.ie); E-mail: [medsafety@hpra.ie](mailto:medsafety@hpra.ie).

## 4.9 Overdose

Symptoms of overdose would likely be those of over-stimulation of dopamine receptors e.g. nausea, vomiting, gastric complaints, postural hypotension, confusion/psychosis or hallucinations.

Supportive measures should be taken to remove unabsorbed drug and maintain blood pressure, if necessary. In addition, the administration of dopamine antagonist drugs may be advisable.

## 5 PHARMACOLOGICAL PROPERTIES

### 5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Dopamine agonists, ATC code: N04BC06

Cabergoline is a dopaminergic ergoline derivative endowed with potent and long-lasting dopamine D2 receptor agonist properties.

Cabergoline has showed to be effective in decreasing daily fluctuations in motor performance in Parkinsonian patients receiving levodopa/carbidopa therapy. Improvement of motor deficit has been demonstrated, while substantially decreasing the levodopa/carbidopa dose.

In healthy volunteers the administration of cabergoline at single oral doses of 0.3-2.5 mg was associated with a significant decrease in serum PRL levels. The effect is prompt (within 3 hours of administration) and persistent (up to 7-28 days). The PRL-lowering effect is dose-related both in terms of degree of effect and duration of action.

The pharmacodynamic actions of cabergoline not linked to the therapeutic effect relate only to blood pressure decrease. The maximal hypotensive effect of cabergoline as a single dose usually occurs during the first 6 hours after drug intake and is dose-dependent both in terms of maximal decrease and frequency.

### 5.2 Pharmacokinetic properties

The pharmacokinetic and metabolic profiles of cabergoline have been studied in healthy volunteers of both sexes, in female hyperprolactinemic patients and in parkinsonian patients. After oral administration of the labelled compound, radioactivity was rapidly absorbed from the gastrointestinal tract as the peak of radioactivity in plasma was between 0.5 and 4 hours. Ten days after administration about 18/20% and 55/72% of the radioactive dose (<sup>3</sup>H-cabergoline/<sup>14</sup>C-cabergoline) was recovered in urine and faeces, respectively. Unchanged drug in urine accounted for 2-3% of the dose.

In urine, the main metabolite identified was 6-allyl-8b-carboxy-ergoline, which accounted for 4-6% of the dose. Three additional metabolites were identified in urine, which accounted overall for less than 3% of the dose. The metabolites have been found to be much less potent than Cabaser as D<sub>2</sub> dopamine receptor agonists in vitro.

The low urinary excretion of unchanged cabergoline has been confirmed also in studies with non-radioactive product. The elimination half-life of cabergoline, estimated from urinary excretion rates, is long (63-68 hours in healthy volunteers, 79-115 hours in hyperprolactinemic patients).

The pharmacokinetics of cabergoline seems to be dose-independent both in healthy volunteers (doses of 0.5-1.5 mg) and parkinsonian patients (steady state of daily doses up to 7 mg/day).

On the basis of the elimination half-life, steady state conditions should be achieved after 4 weeks, as confirmed by the mean peak plasma levels of cabergoline obtained after a single dose ( $37 \pm 8$  pg/ml) and after a 4 week multiple-regimen ( $101 \pm 43$  pg/ml).

In vitro experiments showed that the drug at concentrations of 0.1-10 ng/ml is 41-42% bound to plasma proteins.

Food does not appear to affect absorption and disposition of cabergoline.

While renal insufficiency has been shown not to modify cabergoline kinetics, hepatic insufficiency of severe degree (> 10 Child-Pugh score, maximum score 12) has been shown to be associated with an increase of AUC.

### **5.3 Preclinical safety data**

Almost all the findings noted throughout the series of preclinical safety studies are a consequence of the central dopaminergic effects or the long-lasting inhibition of PRL in rodents with a specific hormonal physiology different to man.

Preclinical safety studies of cabergoline indicate a consistent safety margin for this compound in rodents and in monkeys, as well as a lack of teratogenic, genotoxic or carcinogenic potential.

## **6 PHARMACEUTICAL PARTICULARS**

### **6.1 List of excipients**

Lactose anhydrous  
Leucine

### **6.2 Incompatibilities**

Not applicable

### **6.3 Shelf life**

2 years

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

Do not store above 25°C.  
The bottle should be kept tightly closed in order to protect from moisture

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

Class I amber glass bottles, stoppered with an aluminum tamper-evident screw cap equipped with a low density polyethylene/thermoplastic elastomer (LDPE/TPE) plastic undercap acting as a container holding silicagel, closed by a plastic cap with a porous paper at the lower extremity.

Or

High-density polyethylene (HDPE) bottles with a child-resistant polypropylene (PP) cap equipped with inner low-density polyethylene (LDPE) desiccant canister containing silicagel.

Each bottle contains 20 or 30 tablets and is enclosed in an outer cardboard carton.

Not all pack sizes may be marketed.

### **6.6 Special precautions for disposal of a used medicinal product or waste materials derived from such medicinal product and other handling of the product**

Bottles of Cabaser are supplied with desiccant in the caps. This desiccant must not be removed.

**7 MARKETING AUTHORISATION HOLDER**

Pfizer Healthcare Ireland Unlimited Company  
The Watermarque Building  
Ringsend Road  
Dublin 4  
D04 K7N3  
Ireland

**8 MARKETING AUTHORISATION NUMBER**

PA0822/114/001

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

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Date of last renewal: 29 October 2009

**10 DATE OF REVISION OF THE TEXT**

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