

# Summary of Product Characteristics

## 1 NAME OF THE MEDICINAL PRODUCT

Azecort 137 micrograms/50 micrograms per actuation nasal spray, suspension

## 2 QUALITATIVE AND QUANTITATIVE COMPOSITION

Each g of suspension contains 1000 micrograms azelastine hydrochloride and 365 micrograms fluticasone propionate. One actuation (0.14 g) delivers 137 micrograms azelastine hydrochloride (= 125 micrograms azelastine) and 50 micrograms fluticasone propionate.

### Excipient with known effect:

One actuation (0.14 g) delivers 0.014 mg benzalkonium chloride.

For the full list of excipients, see section 6.1.

## 3 PHARMACEUTICAL FORM

Nasal spray, suspension.

White, homogeneous suspension.

## 4 CLINICAL PARTICULARS

### 4.1 Therapeutic Indications

For symptomatic treatment of severe seasonal allergic rhinitis in adults.

### 4.2 Posology and method of administration

#### Posology

For full therapeutic benefit regular usage is essential.

Contact with the eyes should be avoided.

#### *Adults*

One actuation in each nostril twice daily (morning and evening).

#### Paediatric population

Azecort should not be used in children and adolescents under 18 years of age.

#### *Elderly*

No dose adjustment is required in this population.

#### *Renal and hepatic impairment*

There are no data in patients with renal and hepatic impairment (see section 4.4).

#### *Duration of treatment*

Azecort is suitable for long-term use.

The duration of treatment should correspond to the period of allergenic exposure.

#### Method of administration

Azecort is for nasal use only.

### ***Instruction for use***

#### Preparing the spray:

The bottle should be shaken gently before use for about 5 seconds by tilting it upwards and downwards and the protective cap be removed afterwards. Prior to first use Azecort must be primed by pressing down and releasing the pump 6 times. If Azecort has not been used for more than 7 days it must be reprimed once by pressing down and releasing the pump.

#### Using the spray:

The bottle should be shaken gently before use for about 5 seconds by tilting it upwards and downwards and the protective cap be removed afterwards.

After blowing the nose the suspension is to be sprayed once into each nostril keeping the head tilted downward (see figure).

After use the spray tip is to be wiped and the protective cap to be replaced.



### **4.3 Contraindications**

Hypersensitivity to the active substances or to any of the excipients listed in section 6.1.

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

During post-marketing use, there have been reports of clinically significant drug interactions in patients receiving fluticasone propionate and ritonavir, resulting in systemic corticosteroid effects including Cushing's syndrome and adrenal suppression. Therefore, concomitant use of fluticasone propionate and ritonavir should be avoided, unless the potential benefit to the patient outweighs the risk of systemic corticosteroid side-effects (see section 4.5).

Systemic effects of nasal corticosteroids may occur, particularly when prescribed at high doses for prolonged periods. These effects are much less likely to occur than with oral corticosteroids and may vary in individual patients and between different corticosteroid preparations. Potential systemic effects may include Cushing's syndrome, Cushingoid features, adrenal suppression, growth retardation in children and adolescents, cataract, glaucoma and more rarely, a range of psychological or behavioural effects including psychomotor hyperactivity, sleep disorders, anxiety, depression or aggression (particularly in children).

Azecort undergoes extensive first-pass metabolism, therefore the systemic exposure of intranasal fluticasone propionate in patients with severe liver disease is likely to be increased. This may result in a higher frequency of systemic adverse events. Caution is advised when treating these patients.

Treatment with higher than recommended doses of nasal corticosteroids may result in clinically significant adrenal suppression. If there is evidence for higher than recommended doses being used, then additional systemic corticosteroid cover should be considered during periods of stress or elective surgery.

In general, the dose of intranasal fluticasone formulations should be reduced to the lowest dose at which effective control of the symptoms of rhinitis is maintained. Higher doses than the recommended one (see section 4.2) have not been tested for Azecort. As with all intranasal corticosteroids, the total systemic burden of corticosteroids should be considered whenever other forms of corticosteroid treatment are prescribed concurrently.

Azecort is not recommended in children and adolescent under 18 years of age. However, growth retardation has been reported in children receiving nasal corticosteroids at licensed doses. It is advised that the growth of children and adolescents receiving prolonged treatment with nasal corticosteroids is regularly monitored and therapy reduced to the lowest dose at which effective control of symptoms is maintained.

Visual disturbance may be reported with systemic and topical corticosteroid use. If a patient presents with symptoms such as blurred vision or other visual disturbances, the patient should be considered for referral to an ophthalmologist for evaluation of possible causes which may include cataract, glaucoma or rare diseases such as central serous chorioretinopathy (CSCR) which have been reported after use of systemic and topical corticosteroids.

Close monitoring is warranted in patients with a change in vision or with a history of increased ocular pressure, glaucoma and/or cataracts.

If there is any reason to believe that adrenal function is impaired, care must be taken when transferring patients from systemic steroid treatment to Azecort.

In patients who have tuberculosis, any type of untreated infection, or have had a recent surgical operation or injury to the nose or mouth, the possible benefits of the treatment with Azecort should be weighed against possible risk.

Infections of the nasal airways should be treated with antibacterial or antimycotical therapy, but do not constitute a specific contraindication to treatment with Azecort.

Azecort contains benzalkonium chloride. Long term use may cause oedema of the nasal mucosa.

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

##### ***Fluticasone propionate***

Under normal circumstances, low plasma concentrations of fluticasone propionate are achieved after intranasal dosing, due to extensive first pass metabolism and high systemic clearance mediated by cytochrome P450 3A4 in the gut and liver. Hence, clinically significant drug interactions mediated by fluticasone propionate are unlikely.

A drug interaction study in healthy subjects has shown that ritonavir (a highly potent cytochrome P450 3A4 inhibitor) can greatly increase fluticasone propionate plasma concentrations, resulting in markedly reduced serum cortisol concentrations. During postmarketing use, there have been reports of clinically significant drug interactions in patients receiving intranasal or inhaled fluticasone propionate and ritonavir, resulting in systemic corticosteroid effects. Co-treatment with other CYP 3A4 inhibitors, including cobicistat-containing products is also expected to increase the risk of systemic side-effects. The combination should be avoided unless the benefit outweighs the increased risk of systemic corticosteroid side-effects, in which case patients should be monitored for systemic corticosteroid side-effects.

Studies have shown that other inhibitors of cytochrome P450 3A4 produce negligible (erythromycin) and minor (ketoconazole) increases in systemic exposure to fluticasone propionate without notable reductions in serum cortisol concentrations. Nevertheless, care is advised when co-administering potent cytochrome P450 3A4 inhibitors (e.g. ketoconazole), as there is potential for increased systemic exposure to fluticasone propionate.

##### ***Azelastine hydrochloride***

No specific interaction studies with azelastine hydrochloride nasal spray have been performed. Interaction studies at high oral doses have been performed. However, they bear no relevance to azelastine containing nasal spray as given recommended nasal doses result in much lower systemic exposure. Nevertheless, care should be taken when administering azelastine hydrochloride in patients taking concurrent sedative or central nervous medications because sedative effect may be enhanced. Alcohol may also enhance this effect (see section 4.7).

#### **4.6 Fertility, pregnancy and lactation**

##### ***Pregnancy***

There are no or limited amount of data from the use of azelastine hydrochloride and fluticasone propionate in pregnant women. Therefore, Azecort should be used during pregnancy only if the potential benefit justifies the potential risk to the foetus (see section 5.3)

##### ***Breast-feeding***

It is unknown whether nasally administered azelastine hydrochloride/metabolites or fluticasone propionate/metabolites are excreted in human breast milk. Azecort should be used during lactation only if the potential benefit justifies the potential risk to the newborns/infant.

**Fertility**

There are only limited data on the effect of azelastine hydrochloride and fluticasone propionate with regard to fertility (see section 5.3).

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

Azecort has minor influence on the ability to drive and use machines.

In isolated cases fatigue, weariness, exhaustion, dizziness or weakness that may also be caused by the disease itself, may occur when using Azecort. In these cases, the ability to drive and use machines may be impaired. Alcohol may enhance this effect.

**4.8 Undesirable effects**

Commonly, dysgeusia, a substance-specific unpleasant taste, may be experienced after administration (often due to incorrect method of application, namely tilting the head too far backwards during administration).

Adverse reactions are listed below by system organ class and frequency. Frequencies are defined as:

Very common ( $\geq 1/10$ )

Common ( $\geq 1/100$  to  $< 1/10$ )

Uncommon ( $\geq 1/1,000$  to  $< 1/100$ )

Rare ( $\geq 1/10,000$  to  $< 1/1,000$ )

Very rare ( $< 1/10,000$ )

Not known (cannot be estimated from the available data)

<b>Frequency</b>	<b><i>Very common</i></b>	<b><i>Common</i></b>	<b><i>Uncommon</i></b>	<b><i>Rare</i></b>	<b><i>Very rare</i></b>	<b><i>Not known</i></b>
<b>System Organ Class</b>						
<b><i>Immune system disorders</i></b>					Hypersensitivity including anaphylactic reactions, angioedema (oedema of the face or tongue and skin rash), bronchospasm	
<b><i>Nervous system disorder</i></b>		Headache, Dysgeusia (unpleasant taste), unpleasant smell			Dizziness, somnolence (drowsiness, sleepiness)	
<b><i>Eye disorders*</i></b>					Glaucoma, increased intraocular pressure, cataract	Vision, blurred (see also section 4.4)
<b><i>Respiratory, thoracic and mediastinal disorders</i></b>	Epistaxis		Nasal discomfort (including nasal irritation, stinging, itching), sneezing, nasal dryness, cough, dry throat,		Nasal septal perforation**, mucosal erosion	Nasal ulcers

			throat irritation			
<b>Gastrointestinal disorders</b>				Dry mouth	Nausea	
<b>Skin and subcutaneous tissue disorders</b>					Rash, pruritus, urticaria	
<b>General disorders and administration site conditions</b>					Fatigue (weariness, exhaustion), weakness (see section 4.7)	

\* A very small number of spontaneous reports have been identified following prolonged treatment with intranasal fluticasone propionate.

\*\* Nasal septal perforation has been reported following the use of intranasal corticosteroids.

Systemic effects of some nasal corticosteroids may occur, particularly when administered at high doses for prolonged periods (see section 4.4).

Growth retardation has been reported in children receiving nasal corticosteroids. Growth retardation may be possible in adolescents, too (see section 4.4).

In rare cases osteoporosis was observed, if nasal glucocorticoids were administered long-term.

#### 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 HPRA Pharmacovigilance, Website: [www.hpra.ie](http://www.hpra.ie).

## **4.9 Overdose**

With the nasal route of administration overdose reactions are not anticipated.

There are no data from patients available on the effects of acute or chronic overdosage with intranasal fluticasone propionate.

Intranasal administration of 2 milligrams fluticasone propionate (10 times the recommended daily dose) twice daily for seven days to healthy human volunteers has no effect on hypothalamico-pituitary-adrenal (HPA) axis function.

Administration of doses higher than those recommended over a long period of time may lead to temporary suppression of adrenal function.

In these patients, treatment with Azecort should be continued at a dose sufficient to control symptoms; the adrenal function will recover in a few days and can be verified by measuring plasma cortisol.

In the event of overdose after incidental oral uptake, disturbances of the central nervous system (including drowsiness, confusion, coma, tachycardia and hypotension) caused by azelastine hydrochloride are to be expected based on the results of animal experiments.

Treatment of these disorders must be symptomatic. Depending on the amount swallowed, gastric lavage is recommended. There is no known antidote.

## **5 PHARMACOLOGICAL PROPERTIES**

### **5.1 Pharmacodynamic properties**

Pharmacotherapeutic group: Decongestants and other nasal preparations for topical use, corticosteroids/ fluticasone, combinations, ATC code: R01AD58.

#### *Mechanism of action and pharmacodynamic effects*

Azecort contains azelastine hydrochloride and fluticasone propionate, which have different modes of action and show synergistic effects in terms of improvement of allergic rhinitis and rhino-conjunctivitis symptoms.

**Fluticasone propionate**

Fluticasone propionate is a synthetic trifluorinated corticosteroid that possesses a very high affinity for the glucocorticoid receptor and has a potent anti-inflammatory action, e.g. 3-5 fold more potent than dexamethasone in cloned human glucocorticoid receptor binding and gene expression assays.

**Azelastine hydrochloride**

Azelastine, a phthalazinone derivative is classified as a potent long-acting anti-allergic compound with selective H<sub>1</sub>-antagonist, mast cell stabilizing and anti-inflammatory properties. Data from *in vivo* (preclinical) and *in vitro* studies show that azelastine inhibits the synthesis or release of the chemical mediators known to be involved in early and late stage allergic reactions, e.g. leukotrienes, histamine, platelet-activating factor (PAF) and serotonin.

A relief of nasal allergic symptoms is observed within 15 minutes after administration.

**Azecort**

In 4 clinical studies in adults and adolescents with allergic rhinitis Azecort one actuation in each nostril twice daily significantly improved nasal symptoms (comprising rhinorrhoea, nasal congestion, sneezing and nasal itching) compared with placebo, azelastine hydrochloride alone and fluticasone propionate alone. It significantly improved ocular symptoms (comprising itching, tearing/watering and redness of the eyes) and the patients' disease-related quality of life (Rhinoconjunctivitis Quality of Life Questionnaire – RQLQ) in all 4 studies.

In comparison to a marketed fluticasone propionate nasal spray substantial symptom improvement (50% reduction in nasal symptoms severity) was achieved significantly earlier (3 days and more) with Azecort. The superior effect of Azecort to a fluticasone propionate nasal spray was maintained throughout one-year study in patients with chronic persistent allergic rhinitis and nonallergic/vasomotor rhinitis.

In a ragweed pollen allergen exposure chamber study, first statistically significant relief of nasal symptoms was observed at 5 minutes after administration of Azecort Nasal Spray (compared to placebo). At 15 minutes after administration of Azecort 60% of patients reported a clinically relevant reduction in symptom scores of at least 30%.

**5.2 Pharmacokinetic properties****Absorption**

After intranasal administration of two sprays per nostril (548 µg of azelastine hydrochloride and 200 µg of fluticasone propionate) of Azecort, the mean ( $\pm$  standard deviation) peak plasma exposure ( $C_{max}$ ) was  $194.5 \pm 74.4$  pg/mL for azelastine and  $10.3 \pm 3.9$  pg/mL for fluticasone propionate and the mean total exposure (AUC) was  $4217 \pm 2618$  pg/mL\*hr for azelastine and  $97.7 \pm 43.1$  pg/mL\*hr for fluticasone propionate. The median time to peak exposure ( $t_{max}$ ) from a single dose was 0.5 hours for azelastine and 1.0 hours for fluticasone propionate.

Fluticasone propionate systemic exposure was ~50% increased comparing Azecort with a marketed fluticasone propionate nasal spray. Azecort was equivalent to a marketed azelastine nasal spray with respect to azelastine systemic exposure. There was no evidence of pharmacokinetic interactions between azelastine hydrochloride and fluticasone propionate.

**Distribution**

Fluticasone propionate has a large volume of distribution at steady-state (approximately 318 litre). Plasma protein binding is 91%.

The volume of distribution of azelastine is high indicating distribution predominantly into the peripheral tissue. The level of protein binding is 80-90%. Additionally, both drugs have broad therapeutic windows. Therefore, drug displacement reactions are unlikely.

**Biotransformation**

Fluticasone propionate is cleared rapidly from the systemic circulation, principally by hepatic metabolism to an inactive carboxylic acid metabolite, by the cytochrome P450 enzyme CYP3A4. Swallowed fluticasone propionate is also subject to extensive first pass metabolism. Azelastine is metabolized to *N*-desmethylazelastine via various CYP isoenzymes, mainly CYP3A4, CYP2D6 and CYP2C19.

**Elimination**

The elimination rate of intravenous administered fluticasone propionate is linear over the 250—1000 µg dose range and are characterised by a high plasma clearance ( $CL=1.1$  l/min). Peak plasma concentrations are reduced by approximately 98% within 3-4 hours and only low plasma concentrations were associated with the 7.8 h terminal half-life. The renal clearance of

fluticasone propionate is negligible (<0.2%) and less than 5% as the carboxylic acid metabolite. The major route of elimination is the excretion of fluticasone propionate and its metabolites in the bile.

Plasma elimination half-lives after a single dose of azelastine are approximately 20-25 hours for azelastine and about 45 hours for the therapeutically active metabolite *N*-desmethy laz elastine. Excretion occurs mainly via the faeces. The sustained excretion of small amounts of the dose in the faeces suggests that some enterohepatic circulation may take place.

### 5.3 Preclinical safety data

#### **Fluticasone propionate**

Findings in general toxicology studies were similar to those observed with other glucocorticoids and are associated with exaggerated pharmacological activity. These findings are not likely to be relevant for humans given recommended nasal doses which results in minimal systemic exposure. No genotoxic effects of fluticasone propionate have been observed in conventional genotoxicity tests. Further, there were no treatment-related increases in the incidence of tumours in two year inhalation studies in rats and mice.

In animal studies glucocorticoids have been shown to induce malformations including cleft palate and intra-uterine growth retardation. Again, this is not likely to be relevant for humans given recommended nasal doses which results in minimal systemic exposure (see section 5.2).

#### **Azelastine hydrochloride**

Azelastine hydrochloride displayed no sensitising potential in the guinea pig. Azelastine demonstrated no genotoxic potential in a battery of *in vitro* and *in vivo* tests, nor any carcinogenic potential in rats or mice. In male and female rats, azelastine at oral doses greater than 3 mg/kg/day caused a dose-related decrease in the fertility index; no substance-related alterations were found in the reproductive organs of males or females during chronic toxicity studies, however, embryotoxic and teratogenic effects in rats, mice and rabbits occurred only at maternal toxic doses (for example, skeletal malformations were observed in rats and mice at doses of 68.6 mg/kg/day).

#### **Azecort**

Repeated dose intranasal toxicity studies in rats for a period up to 90 days and in dogs for 14 days with Azecort revealed no new adverse effects in comparison to the individual components.

Environmental risk assessment studies have shown that fluticasone propionate may pose a risk for the aquatic compartment. (See section 6.6).

## 6 PHARMACEUTICAL PARTICULARS

### 6.1 List of excipients

Disodium edetate  
Glycerol  
Microcrystalline cellulose  
Carmellose sodium  
Polysorbate 80  
Benzalkonium chloride  
Phenylethyl alcohol  
Purified water

### 6.2 Incompatibilities

Not applicable.

### 6.3 Shelf life

Bottle with 6.4 g suspension in 10 ml bottles: 18 months  
Bottle with 23 g suspension in 25 ml bottles: 2 years

In-use shelf life (after first opening): 6 months

### 6.4 Special precautions for storage

Do not refrigerate or freeze.

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

Type I amber glass bottle fitted with a spray pump, a nasal polypropylene applicator (actuator) and a dust cap, containing 6.4 g (at least 28 actuations) and 23 g (at least 120 actuations) suspension.

Pack sizes:

1 bottle with 6.4 g suspension in 10 ml bottles (at least 28 actuations), 1 bottle with 23 g suspension in 25 ml bottles (at least 120 actuations).

Multipacks containing 64 g (10 bottles with 6.4 g) nasal spray, suspension Multipacks containing 69 g (3 bottles with 23 g) nasal spray, suspension.

Not all pack sizes may be marketed.

## **6.6 Special precautions for disposal and other handling**

This medicinal product may pose a risk to the environment. (See section 5.3). Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

## **7 MARKETING AUTHORISATION HOLDER**

Mylan IRE Healthcare Limited  
Unit 35/36  
Grange Parade  
Baldoyle Industrial Estate  
Dublin 13  
Ireland

## **8 MARKETING AUTHORISATION NUMBER**

PA2010/061/001

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

Date of First Authorisation: 22<sup>nd</sup> February 2013

Date of Last Renewal: 24<sup>th</sup> January 2018

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

March 2022