LUXTURNA®▼
voretigene neparvovec
for subretinal injection

Package leaflet: Information for the patient

April 2019, LUX19-C001
MHRA approval: 16 May 2019

Package leaflet: Information for the patient
Luxturna 5 x 10^{12} vector genomes/mL concentrate and solvent for solution for injection
voretigene neparvovec

▼ This medicine is subject to additional monitoring. This will allow quick identification of new safety information. You can help by reporting any side effects you may get. See the end of section 4 for how to report side effects.

Read all of this leaflet carefully before you are given this medicine because it contains important information for you.

- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor or nurse.
- If you get any side effects, talk to your doctor or nurse. This includes any possible side effects not listed in this leaflet. See section 4.

What is in this leaflet:

1. What Luxturna is and what it is used for

Luxturna is a gene therapy product that contains the active substance voretigene neparvovec.

Luxturna is used for the treatment of adults and children with vision loss due to inherited retinal dystrophy caused by mutations in the *RPE65* gene. These mutations prevent the body from producing a protein needed for vision and so lead to loss of sight and eventual blindness.

The active substance in Luxturna, voretigene neparvovec, is a modified virus that contains a working copy of the *RPE65* gene. After injection it delivers this gene into the cells of the retina, the layer at the back of the eye that detects light. This enables the retina to produce the proteins needed for vision. The virus used to deliver the gene does not cause disease in humans.

Luxturna will be given to you only if genetic testing shows that your vision loss is caused by mutations in the *RPE65* gene.

2. What you need to know before you are given Luxturna

You will not be given Luxturna

- if you are allergic to voretigene neparvovec or any of the other ingredients of this medicine (listed in section 6)
- if you have an eye infection
- if you have eye inflammation

If any of the above applies to you, or if you are unsure of any of the above, please talk to your doctor before you receive Luxturna.

Warnings and precautions

Before receiving treatment with Luxturna:

- Tell your doctor if you have signs of an eye infection or eye inflammation, for example if you have eye redness, sensitivity to light, eye swelling or eye pain.
- Tell your doctor if you have an active infection of any sort. Your doctor may delay your treatment until your infection is gone because this medicine may make it more difficult for you to fight an infection. See also section 3.

After receiving Luxturna:

- Get immediate care from your doctor if your eye or eyes become red, painful, sensitive to light, you see flashes or floaters in your vision, or if you notice any worsening or blurred vision.
- You should avoid air travel or other travel to high elevations until advised by your doctor. During treatment with this medicine, the doctor inserts an air bubble in the eye, which is slowly absorbed by your body. Until the bubble is fully absorbed, air travel or other travel to high elevations may make the bubble expand and lead to eye damage, including vision loss. Please talk to your doctor before travelling.
- You should avoid swimming because of an increased risk of infection in the eye. Please talk to your doctor before going to swim after receiving treatment with Luxturna.
- You should avoid strenuous physical activity because of an increased risk of injury to the eye. Please talk to your doctor before beginning to engage in strenuous physical activity after receiving Luxturna.
- Some people develop cataracts. A cataract is clouding of the natural lens inside the eye that can make it harder to see clearly. The development or worsening of cataracts is a known complication of the eye surgery that will be required before you receive Luxturna. There is an additional risk of cataract if the lens inside the eye is damaged by the needle used to inject the medicine into the back of the eye.
- You may have temporary visual disturbances, such as light sensitivity and blurred vision. Tell your doctor about any visual disturbances that you experience. Your doctor may be able to help reduce any discomfort caused by these temporary disturbances.
- Some medicine may be present in your tears. You and your caregiver should place any used dressings and waste material with tears and nasal secretions in sealed bags before disposing of them. You should follow these precautions for 14 days.

- You and your caregiver, especially if pregnant, breast-feeding or with a suppressed immune system, should wear gloves during dressing changes and when disposing of the dressings and other waste material. Follow these precautions for 14 days after the treatment.
- You will not be able to donate blood, organs, tissues and cells for transplantation after you have been treated with Luxturna. This is because Luxturna is a gene therapy product.

Children and adolescents
Luxturna has not been studied in children under four years of age.

Other medicines and Luxturna
Please tell your doctor if you are taking, have recently taken or might take any other medicines.

Pregnancy and breast-feeding and fertility
If you are pregnant or breast-feeding, think you might be pregnant, or are planning to have a baby, ask your doctor or nurse for advice before being treated with Luxturna.

The effects of this medicine on pregnancy and the unborn child are not known. As a precaution, you should not receive Luxturna while you are pregnant.

Luxturna has not been studied in breast-feeding women. It is not known whether it passes into breast milk. Ask your doctor whether you should stop breast-feeding after receiving Luxturna.

There is no information on the effect of Luxturna on male or female fertility.

Driving and using machines
You may have temporary visual disturbances after receiving Luxturna. Do not drive or use machines until your vision has recovered. Talk to your doctor before resuming these activities.

Important information about some of the ingredients of Luxturna
Luxturna contains less than 1 mmol sodium (23 mg) per dose, i.e. essentially 'sodium-free'.

3. How Luxturna is given to you

Luxturna will be given to you in an operating room by surgeons experienced in performing eye surgery.

Luxturna is given under anaesthesia. Your doctor will talk to you about the anaesthesia and how it will be given to you.

Your doctor will carry out eye surgery to remove the clear gel inside the eye, and then inject Luxturna directly under your retina, the thin light-sensing layer at the back of that eye. This will be repeated on your other eye at least 6 days afterwards. You will need to stay for post-operative observation for a few hours after each procedure to monitor your recovery and watch for any side effects from the surgery or the anaesthesia.

Before Luxturna treatment is started, your doctor may prescribe a medicine that will suppress your immune system (the body's natural defences) so that it will not try to fight the Luxturna when it is given. It is important that you take this medicine according to the instructions given. Do not stop taking the medicine without first talking to your doctor.

If you are given more Luxturna than you should be
As this medicine is given to you by a doctor, it is unlikely that you will be given too much. If it does occur, your doctor will treat the symptoms as necessary. Tell your doctor or nurse if you have any

visual problems.

If you have any further questions on the use of this medicine, ask your doctor or nurse.

4. Possible side effects

Like all medicines, this medicine can cause side effects, although not everybody gets them.

The following side effects may happen with Luxturna:

Common (may affect up to 1 in 10 people)

- Deposits under the retina

The following side effects may happen with the injection procedure:

Very common (may affect more than 1 in 10 people)

- Redness of the eye
- Cataract (clouding of the lens)
- Increased pressure in the eye

Common (may affect up to 1 in 10 people)

- Break in the retina
- Eye pain
- Eye swelling
- Detachment of the retina
- Nausea (feeling sick), vomiting, abdominal (belly) pain, lip pain
- Change of the electrical activity of the heart
- Headache, dizziness
- Rash, facial swelling
- Anxiety
- Problems associated with the placement of a breathing tube in the windpipe
- Breakdown of the surgical wound

Damage to the tissues of the eye may be accompanied by bleeding and swelling and an increased risk of infection. There is reduced vision in the days after surgery that usually improves; tell your doctor if vision does not return.

Reporting of side effects
If you get any side effects, talk to your doctor or nurse. This includes any possible side effects not listed in this leaflet. Reporting forms and information can be found at https://yellowcard.mhra.gov.uk/ (UK). Adverse events should also be reported to Novartis via uk.patientsafety@novartis.com or online through the patient safety information (PSI) tool at https://psi.novartis.com. By reporting side effects, you can help provide more information on the safety of this medicine.

5. How Luxturna is stored

Luxturna will be stored by the healthcare professionals at your healthcare facility.
Concentrate and solvent must be stored and transported frozen at ≤-65 ºC. Once thawed, the medicine should not be re-frozen and should be left at room temperature (below 25 °C).
Do not use this medicine after the expiry date which is stated on the label and carton after EXP.

6. Contents of the pack and other information

What Luxturna contains

- The active substance is voretigene neparvovec. Each mL of concentrate contains 5 x 10^{12} vector genomes (vg). The concentrate (0.5 mL extractable volume in a single-dose 2 mL vial) requires a 1:10 dilution prior to administration.
- Each dose of diluted solution contains 1.5 x 1011 vector genomes of voretigene neparvovec in a deliverable volume of 0.3 mL.
- The other ingredients of the concentrate are sodium chloride (see end of section 2), sodium dihydrogen phosphate monohydrate (for pH adjustment), disodium hydrogen phosphate dihydrate (for pH adjustment),

poloxamer 188 and water for injections.
- The solvent contains sodium chloride (see end of section 2), sodium dihydrogen phosphate monohydrate (for pH adjustment), disodium hydrogen phosphate dihydrate (for pH adjustment), poloxamer 188 and water for injections.

What Luxturna looks like and contents of the pack
Luxturna is a clear, colourless concentrate for solution for subretinal injection, supplied in a clear plastic vial. The solvent is a clear, colourless liquid supplied in a clear plastic vial.

Each foil pouch includes a carton containing 1 vial of concentrate and 2 vials of solvent.

Marketing Authorisation Holder
- Novartis Europharm Limited Ireland, Vista Building, Elm Park, Merrion Road, Dublin 4, Ireland

Manufacturer
- Novartis Pharma GmbH, Roonstrasse 25, D 90429 Nuremberg Germany

This leaflet was last revised in February 2019.

Other sources of information
This leaflet is available as an audio file from the website: www.voretigeneneparvovec.support.

Detailed information on this medicine is available on the European Medicines Agency web site: http://www.ema.europa.eu.

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