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Withdrawal of application for the marketing authorisation of Lumevoq (lenadogene nolparvovec)

Gensight Biologics SA withdrew its application for a marketing authorisation of Lumevoq for treating loss of vision due to an eye condition known as Leber hereditary optic neuropathy.

The company withdrew the application on 20 April 2023.

What is Lumevoq and what was it intended to be used for?

Lumevoq was developed as a medicine for treating vision loss in patients with Leber hereditary optic neuropathy, a disease that affects the nerve at the back of the eye.

It was intended for patients from 15 years of age who have a particular mutation (change) in a gene known as m.11778G>A.

Lumevoq contains the active substance lenadogene nolparvovec and was to be available as a suspension for injection into both eyes.

Lumevoq was designated an 'orphan medicine' (a medicine used in rare diseases) on 13 May 2011 for treating Leber's hereditary optic neuropathy. Further information on the orphan designation can be found on the Agency's website: ema.europa.eu/medicines/human/orphan-designations/eu311860.

How does Lumevoq work?

Patients with Leber hereditary optic neuropathy have genetic mutations that affect the energy-producing components of the nerve cells in the eyes. As a result of these mutations, the cells are unable to produce an enzyme (protein) known as NADH dehydrogenase 4 (ND4).

The active substance in Lumevoq, lenadogene nolparvovec, consists of a virus that contains the gene for this enzyme. When the medicine is injected into the eye, the virus is expected to deliver the gene into the cells allowing them to produce the ND4 enzyme.

The virus used in this medicine (adeno-associated virus) does not cause disease in humans.

Official address Domenico Scarlattilaan 6 ● 1083 HS Amsterdam ● The Netherlands
Address for visits and deliveries Refer to www.ema.europa.eu/how-to-find-us
Send us a question Go to www.ema.europa.eu/contact **Telephone** +31 (0)88 781 6000 An agency of the European Union

What did the company present to support its application?

The company presented results from two main studies involving 76 patients with Leber hereditary optic neuropathy caused by the m.11778G>A mutation. The patients in these studies received an injection of Lumevoq in one eye, while in their other eye they received a sham injection (whereby the syringe is pressed against the eye but there is no injection). Both studies looked at how well Lumevoq improved eyesight compared with a sham injection after 48 weeks.

A third main study followed patients from the two studies and tested their eyesight three years after the injections.

A fourth main study involving 98 patients with Leber hereditary optic neuropathy caused by the m.11778G>A mutation compared the treatment of both eyes with Lumevoq with the treatment of one eye with Lumevoq and the other with a placebo (dummy) injection.

How far into the evaluation was the application when it was withdrawn?

The application was withdrawn after the European Medicines Agency had evaluated the information from the company and prepared questions for the company. After the Agency had assessed the company's responses to the last round of questions, there were still some unresolved issues.

What did the Agency recommend at that time?

At the time of the withdrawal, the Agency had some concerns and its provisional opinion was that Lumevoq could not have been authorised for treating Leber hereditary optic neuropathy caused by the m.11778G>A mutation.

The results of the studies did not show a significant difference in vision in eyes injected with Lumevoq and those receiving a sham or placebo injection. Furthermore, the studies did not provide sufficient evidence to show that giving Lumevoq into both eyes would benefit patients.

The Agency also had some questions about laboratory studies carried out with the medicine as well as about the manufacturing process and sites that would make and test the commercial product. Therefore, at the time of the withdrawal, the Agency's opinion was that the benefits of Lumevoq did not outweigh its risks.

What were the reasons given by the company for withdrawing the application?

In its letter notifying the Agency of the withdrawal of the application, the company stated that its withdrawal is based on the considerations of EMA's Committee for Advance Therapies (CAT) concerning the benefits of the medicine.

Does this withdrawal affect patients in clinical trials or compassionate use programmes?

The company informed the Agency that there are no consequences for patients who are already treated and currently participating in clinical trials or in compassionate use programmes.

The company intends to resume its early access programs when the drug is available for clinical use.

If you are in a clinical trial or in compassionate use programmes and need more information about your treatment, speak with your doctor.