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Withdrawal of application for the marketing authorisation of Dyrupeg (pegfilgrastim)

CuraTeQ Biologics s.r.o. withdrew its application for a marketing authorisation of Dyrupeg for use in cancer patients to reduce the duration of neutropenia (low levels of neutrophils, a type of white blood cell) and prevent febrile neutropenia (neutropenia accompanied by fever due to an infection). Neutropenia is a common side effect of cancer chemotherapy and can leave patients vulnerable to infections.

The company withdrew the application on 8 June 2023.

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

Dyrupeg was developed as a medicine to reduce the duration of neutropenia and prevent febrile neutropenia in cancer patients. The medicine was not intended for use in patients with the blood cancer chronic myeloid leukaemia or with myelodysplastic syndromes (conditions in which large numbers of abnormal blood cells are produced, which can develop into leukaemia).

Dyrupeg contains the active substance pegfilgrastim and was to be available as a prefilled syringe containing a solution for injection under the skin, given as a single dose.

Dyrupeg was developed as a 'biosimilar' medicine. This means that Dyrupeg was intended to be highly similar to another biological medicine already authorised in the EU (the 'reference medicine'). The reference medicine for Dyrupeg is Neulasta. For more information on biosimilar medicines, see here.

How does Dyrupeg work?

The active substance in Dyrupeg and Neulasta, pegfilgrastim, consists of filgrastim, which is very similar to a human protein called granulocyte colony stimulating factor (G-CSF). Filgrastim works by encouraging the bone marrow to produce more white blood cells, increasing white blood cell counts and so treating neutropenia and helping the body fight infection.

Filgrastim has been available in other medicines in the European Union for a number of years. In Dyrupeg and Neulasta, filgrastim has been 'pegylated' (attached to a chemical called polyethylene glycol). This slows down the removal of filgrastim from the body, allowing the medicine to be given less often.

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What did the company present to support its application?

The company presented results from laboratory studies that investigated whether the active substance in Dyrupeg is highly similar to that in Neulasta in terms of structure, purity and biological activity.

The company also presented results from a study involving 124 healthy volunteers investigating whether Dyrupeg and Neulasta produce similar levels of the active substance in the body and have a similar effect on the number of neutrophils in the blood.

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?

Based on the review of the data and the company's response to the Agency's questions, at the time of the withdrawal the Agency had some concerns and its provisional opinion was that Dyrupeg could not have been authorised for the reduction of neutropenia and prevention of febrile neutropenia in patients with cancer.

The Agency considered that the results presented by the company did not show that Dyrupeg produces similar levels of the active substance in the body as the reference medicine Neulasta. The Agency also had concerns relating to the quality of the medicine, as the company did not have EU certification to show that the medicine had been manufactured according to EU good manufacturing practice (GMP) principles nor did it have the appropriate EU certification to confirm the quality and safety of the pre-filled syringe.

Therefore, at the time of the withdrawal, the Agency's opinion was that the company had not shown that the benefits of Dyrupeg outweighed the 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 it could not provide EU GMP certification of its manufacturing facility within the required time limit.

Does this withdrawal affect patients in clinical trials?

The company informed the Agency that there are no consequences for patients in clinical trials using Dyrupeg.

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