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Public summary of opinion on orphan designation

Tinostamustine for the treatment of T-cell prolymphocytic leukaemia

On 27 July 2020, orphan designation EU/3/20/2307 was granted by the European Commission to Mundipharma Corporation (Ireland) Limited, Ireland, for tinostamustine (also known as EDO-S101) for the treatment of T-cell prolymphocytic leukaemia.

What is T-cell prolymphocytic leukaemia?

T-cell prolymphocytic leukaemia is a cancer of a type of white blood cells, called T cells, which play an important role in the immune system (the body's natural defences).

When leukaemia develops, the bone marrow produces large numbers of abnormal blood cells. In patients with T-cell prolymphocytic leukaemia there is uncontrolled growth of abnormal, immature T cells called prolymphocytes. The prolymphocytes do not work properly, and over a period of time these abnormal cells replace the normal blood cells in the bone marrow and blood. They spread to other organs such as the lymph nodes, liver and spleen, causing enlargement and impairing their function. They also spread to the skin causing rashes, plaques and tumours which can be itchy and painful.

The disease is life-threatening, with poor long-term survival, and chronically debilitating due to its effects on the bone marrow, blood and organs.

What is the estimated number of patients affected by the condition?

At the time of designation, T-cell prolymphocytic leukaemia affected approximately 0.1 in 10,000 people in the European Union (EU). This was equivalent to a total of around 5,000 people*, and is below the ceiling for orphan designation, which is 5 people in 10,000. This is based on the information provided by the sponsor and the knowledge of the Committee for Orphan Medicinal Products (COMP).

What treatments are available?

At the time of application for orphan designation, no satisfactory treatments had been authorised for the treatment of the condition. Patients were normally given chemotherapy (cancer medicines) in line with the treatment of other leukaemias. Some patients might receive haematopoietic stem cell

*For the purpose of the designation, the number of patients affected by the condition is estimated and assessed on the basis of data from the European Union, Iceland, Liechtenstein, Norway and the United Kingdom. This represents a population of 519,200,000 (Eurostat 2020).

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transplants (a procedure where the patient's bone marrow is cleared of cells and replaced by stem cells to form new bone marrow that produces healthy cells).

How is this medicine expected to work?

This medicine is a compound developed by linking together molecules of two other cancer medicines, bendamustine and vorinostat. Bendamustine belongs to a group of cancer medicines called 'alkylating agents'. It attaches to the DNA of cells while they are reproducing, stopping cell division. As a result, the cancer cells cannot divide and the growth of tumours slows down. The vorinostat part of the molecule controls the switching on and off of genes, and is expected to make it easier for the alkylating agent to access and attach to DNA.

What is the stage of development of this medicine?

The effects of tinostamustine have been evaluated in experimental models.

At the time of submission of the application for orphan designation, no clinical trials with tinostamustine in patients with T-cell prolymphocytic leukaemia had been started.

At the time of submission, tinostamustine was not authorised anywhere in the EU for the treatment of T-cell prolymphocytic leukaemia. Orphan designation of tinostamustine had been granted in the United States for the condition.

In accordance with Regulation (EC) No 141/2000, the COMP adopted a positive opinion on 18 June 2020, recommending the granting of this designation.

Opinions on orphan medicinal product designations are based on the following three criteria:

- the seriousness of the condition;
- the existence of alternative methods of diagnosis, prevention or treatment;
- either the rarity of the condition (affecting not more than 5 in 10,000 people in the EU) or insufficient returns on investment.

Designated orphan medicinal products are products that are still under investigation and are considered for orphan designation on the basis of potential activity. An orphan designation is not a marketing authorisation. As a consequence, demonstration of quality, safety and efficacy is necessary before a product can be granted a marketing authorisation.

For more information

Contact details of the current sponsor for this orphan designation can be found on EMA website.

For contact details of patients' organisations whose activities are targeted at rare diseases see:

- Orphanet, a database containing information on rare diseases, which includes a directory of patients' organisations registered in Europe;
- European Organisation for Rare Diseases (EURORDIS), a non-governmental alliance of patient organisations and individuals active in the field of rare diseases.

Translations of the active ingredient and indication in all official EU languages[1], Norwegian and Icelandic

Language	Active ingredient	Indication
English	Tinostamustine	Treatment of T-cell prolymphocytic leukaemia
Bulgarian	Тиностамустин	Лечение на Т-клетъчна пролимфоцитна левкемия
Croatian	Tinostamustine	Liječenje T-stanične prolimfocitne leukemije
Czech	Tinostamustine	Léčba prolymfocytické leukémie z T-buněk
Danish	Tinostamustin	Behandling af T-celleprolymfocytisk leukæmi
Dutch	Tinostamustine	Behandeling van T-cel prolymfatische leukemie
Estonian	Tinostamustiin	T-rakkude prolümfotsüütilise leukeemia ravi
Finnish	Tinostamustiini	T-soluisen prolymfosyyttisen leukemian hoito
French	Tinostamustine	Traitement de la leucémie prolymphocytaire T
German	Tinostamustin	Behandlung von T-Zell-Prolymphozytenleukämie
Greek	Τινοσταμουστίνη	Θεραπεία της Τ-προλεμφοκυτταρικής λευχαιμίας
Hungarian	Tinostamustin	T-sejtes prolimfocitás leukémia kezelése
Italian	Tinostamustina	Trattamento della leucemia prolinfocitica a cellule T
Latvian	Tinostamustīns	T-šūnu prolimfocitiskās leikēmijas ārstēšana
Lithuanian	Tinostamustinas	T-ląstelių prolimfocitinės leukemijos gydymas
Maltese	Tinostamustina	Trattament tal-lewkimja prolimfoċitika b'ċellola T
Polish	Tinostamustyna	Leczenie białaczki prolimfocytarnej komórek T
Portuguese	Tinostamustina	Tratamento da leucemia prolinfocítica de células T
Romanian	Tinostamustină	Tratamentul leucemiei prolinfocitară cu celule T
Slovak	Tinostamustin	Liečba prolymfocytickej leukémie T-buniek
Slovenian	Tinostamustin	Zdravljenje prolimfocitne levkemije T-celic
Spanish	Tinostamustina	Tratamiento de la leucemia prolinfocítica-T
Swedish	Tinostamustin	Behandling av prolymfocytär T-cellsleukemi
Norwegian	Tinostamustine	Behandling av T-prolymfocytt leukemi
Icelandic	Tinostamustin	Meðferð við foreitilfrumuhvítblæði T-eitilfrumna

[1] At the time of designation