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Committee for Orphan Medicinal Products

Public summary of positive opinion for orphan designation of human heterologous liver cells (for infusion) for the treatment of acute liver failure

On 11 April 2006, orphan designation (EU/3/06/362) was granted by the European Commission to Cytonet GmbH & Co. KG, Germany, for human heterologous liver cells (for infusion) for the treatment of acute liver failure.

What is acute liver failure?

Acute liver failure is characterised by the sudden liver failure in a patient without evidence of chronic liver disease. The most common first indication of liver failure is yellowing of the skin (jaundice). It may lead to serious complications such as development of degenerative disease of the brain and defect in the blood clotting mechanism within 6 months from the onset of symptoms. The most common causes are viral hepatitis (infectious disease that affects the liver) or damage due to alcohol or drugs (e.g. paracetamol). Acute liver failure is chronically debilitating and life-threatening.

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

At the time of designation acute liver failure affected less than 3.5 in 10,000 people in the European Union (EU)*. This is based on the information provided by the sponsor and knowledge of the Committee for Orphan Medicinal Products (COMP). This is below the threshold for orphan designation which is 5 in 10,000. This is equivalent to a total of around 161,000 people.

What treatments are available?

Treatment of acute liver failure depends mainly on the stage of the liver damage. In cases of advanced liver damage, liver transplantation (getting a liver from another person) is performed. At the time of submission of the application for orphan drug designation, medicinal products to treat symptoms of acute liver failure were authorised in the Community.

Human heterologous liver cells (for infusion) might be of potential significant benefit for the treatment of acute liver failure because it might improve the long-term outcome of the patients. This assumption will have to be confirmed at the time of marketing authorisation. This will be necessary to maintain the orphan status.

How is this medicine expected to work?

Heterologous cells come from donors different to the person who will receive the cells. These liver cells will be isolated and treated so they are suitable used for infusion into patients with acute liver failure. Although the mechanism of action of human heterologous liver cells (for infusion) is not clear, it is believed that when administered in the patient, these human liver cells will support liver function by eliminating toxic metabolites (substances involved in reactions in the body) from the liver.

* Disclaimer: For the purpose of the designation, the number of patients affected by the condition is estimated and assessed based on data from the European Union (EU 25), Norway, Iceland and Liechtenstein. This represents a population of 459,700,000 (Eurostat 2004).

What is the stage of development of this medicinal product?

The evaluation of the effects of human heterologous liver cells (for infusion) in experimental models is ongoing.

At the time of submission of the application for orphan designation, clinical trials in patients with acute liver failure were ongoing.

Human heterologous liver cells (for infusion) was not authorised anywhere worldwide for acute liver failure or designated as orphan medicinal product elsewhere for this condition, at the time of submission.

According to Regulation (EC) No 141/2000 of 16 December 1999, the Committee for Orphan Medicinal Products (COMP) adopted on 8 March 2006 a positive opinion recommending the grant of the above-mentioned 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;
- and either the rarity of the condition (affecting not more than five in 10,000 people in the Community) or the 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 the quality, safety and efficacy is necessary before a product can be granted a marketing authorisation.

For more information:

Sponsor's contact details:

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**Translations of the active ingredient and indication in all EU languages
and Norwegian and Icelandic**

Language	Active Ingredient	Indication
English	Human heterologous liver cells (for infusion)	Treatment of acute liver failure
Czech	Lidské heterologní jaterní buňky (k infúzi)	Léčba Akutní jaterní insuficience
Danish	Humane heterologe leverceller (til infusion)	Behandling af akut leversvigt
Dutch	Humane heterologe levercellen (voor infusie)	Behandeling van acuut leverfalen
Estonian	Inimese heteroloogilised maksarakud (infusiooniks)	Akuutse maksapuudulikkuse ravi
Finnish	Ihmisen poikkeavat (heterologiset) maksasolut (infuusiot varten)	Akuutin maksan vajaatoiminnan hoito
French	Cellules hépatiques humaines hétérologues (pour perfusion)	Traitement de l'insuffisance hépatique aiguë
German	Humane heterologe Leberzellen (zur Infusion)	Behandlung des akuten Leberversagens
Greek	Ανθρώπινα ετερόλογα ηπατικά κύτταρα (για έγχυση)	Θεραπεία της οξείας ηπατικής ανεπάρκειας
Hungarian	Humán heterológ májsejtek (infúzióhoz)	Akut májelégtelenség kezelése
Italian	Cellule epatiche umane eterologhe (per infusione)	Trattamento della insufficienza epatica acuta
Latvian	Cilvēka ksenogēnās aknu šūnas (infūzijai)	Akūtās aknu mazspējas ārstēšana
Lithuanian	Žmonių heterologinės kepenų ląstelės (infuzijai)	Ūmaus kepenų nepakankamumo gydymas
Polish	Ludzkie heterologiczne komórki wątroby (do infuzji)	Leczenie ostrej niewydolności wątroby
Portuguese	Células hepáticas humanas heterólogas (para perfusão)	Tratamento da insuficiência hepática aguda
Slovak	Ľudské heterológne hepatocyty (pečeňové bunky) (pre infúziu)	Liečba akútne zlyhanie pečene
Slovenian	Človeške heterologne jetrne celice (za infundiranje)	Zdravljenje akutne jetrne odpovedi
Spanish	Células hepáticas heterólogas humanas (para infusión)	Tratamiento de la insuficiencia hepática aguda
Swedish	mänskliga heterologa leverceller (för infusion)	Behandling av akut leversvikt
Norwegian	Humane heterologe leverceller (til infusjon)	Behandling av akutt leversvikt
Icelandic	Ósamgena lifrarfrumur úr mönnum (gefið í æð)	Meðferð bráðrar lifrabilunar