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Committee for Orphan Medicinal Products

Public summary of opinion on orphan designation

Beta-artemether / lumefantrine (powder for oral suspension) for the treatment of malaria

On 28 January 2010, orphan designation (EU/3/09/702) was granted by the European Commission to Dafra Pharma International NV, Belgium, for beta-artemether / lumefantrine (powder for oral suspension) for the treatment of malaria.

What is malaria?

Malaria is an infectious disease caused by *Plasmodium* parasites. There are four species of *Plasmodium* parasites that may infect humans: *P. vivax*, *P. malariae*, *P. ovale* and *P. falciparum*. They are transmitted from person to person by the bite of infected *Anopheles* mosquitoes. Once in the body, the parasites multiply in the liver and then infect and destroy red blood cells.

Transmission mostly occurs in tropical and subtropical regions including parts of the Americas, Asia, and Africa. In Europe, malaria mainly affects travellers returning from these areas.

Fever is the major symptom of malaria and the disease must always be suspected when fever occurs during or after travel to an infected area. In addition, flu-like symptoms such as chills, headaches, muscle-aches and fatigue commonly occur.

Malaria is a severe and life-threatening disease because of its complications such as cerebral malaria (a deep coma caused by infected red blood cells adhering to blood vessels in the brain), seizures (fits), and breathing and kidney problems. Malaria due to *P. falciparum* is the most severe form and may rapidly lead to complications, especially in children and others with low immunity (protection) to the disease.

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

At the time of designation, malaria affected approximately 0.3 in 10,000 people in the European Union (EU)*. This is equivalent to a total of around 15,000 people, and is below the threshold for orphan

*Disclaimer: 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 (EU 27), Norway, Iceland and Liechtenstein. This represents a population of 504,800,000 (Eurostat 2009).

7 Westferry Circus ● Canary Wharf ● London E14 4HB ● United Kingdom
Telephone +44 (0)20 7418 8400 **Facsimile** +44 (0)20 7523 7040
E-mail info@ema.europa.eu **Website** www.ema.europa.eu
An agency of the European Union

designation, which is 5 people in 10,000. This is based on the information provided by the sponsor and knowledge of the Committee for Orphan Medicinal Products (COMP).

What treatments are available?

At the time of designation, several medicines were authorised in the EU to treat malaria, including tablets containing a combination of beta-artemether and lumefantrine. This combination is a recommended option for non-complicated malaria, and is effective against malaria due to *P. falciparum*.

The sponsor has provided sufficient information to show that beta-artemether / lumefantrine (powder for oral suspension) might be of significant benefit for patients with malaria because of the way in which the medicine is given. This medicine is a powder to be made up into an oral suspension, which could be given to children and adults who have difficulty swallowing tablets. In addition, while for the authorised combination treatment four tablets need to be taken twice a day, the suspension is to be taken once a day. This might make it easier for patients to stick to their treatments. These assumptions will need to be confirmed at the time of marketing authorisation, in order to maintain the orphan status.

How is this medicine expected to work?

Beta-artemether / lumefantrine (powder for oral suspension) contains two active substances, beta-artemether and lumefantrine, which are given together to improve effectiveness. The exact mode of action of these substances is not clear, but they are thought to work by damaging the membrane of the parasite, thus killing the parasite.

What is the stage of development of this medicine?

The effects of beta-artemether / lumefantrine (powder for oral suspension) have been evaluated in experimental models.

At the time of submission of the application for orphan designation, clinical trials with the designated product in patients with malaria had finished.

At the time of submission, beta-artemether / lumefantrine (powder for oral suspension) was not authorised anywhere in the EU for malaria or designated as an orphan medicinal product elsewhere for this condition. The medicine was authorised outside the EU in 25 countries where malaria is endemic.

In accordance with Regulation (EC) No 141/2000 of 16 December 1999, the COMP adopted a positive opinion on 5 November 2009 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 Community) 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

Sponsor's contact details:

Dafra Pharma International NV
Slachthuisstraat 30/7
2300 Turnhout
Belgium
Telephone: +32 14 61 78 20
Telefax: +32 14 61 78 59
E-mail: info@dafra.be

Patient associations' contact points

INOPSU: The International Network of Paediatric Surveillance Units
Royal College of Paediatrics and Child Health (RCPCH)
British Paediatric Surveillance Unit
50 Hallam Street
London W1W 6DE
United Kingdom
Telephone: +44 207 323 7911
E-mail: bspsu@rcpch.ac.uk

Associazione Fonte di Speranza (ONLUS)
Viale Rimembranze 21/7
20020 Lainate (MI)
Italy
Telephone /Telefax: +39 02 93 57 13 68

SOS Paludisme
33, rue Jacques Mugnier
BP42431
68067 Mulhouse Cedex 02
France
Telephone: +33 3 89 33 04 25
E-mail: contact@sospaludisme.org

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

Language	Active ingredient	Indication
English	Beta-artemether / lumefantrine (powder for oral suspension)	Treatment of malaria
Bulgarian	Бета-артеметер / лумефантрин (прах за перорална суспензия)	Лечение на малария
Czech	Beta-artemether / lumefantrin (prášek pro přípravu perorální suspense)	Léčba malárie
Danish	Beta-artemether / lumefantrin (pulver til oral suspension)	Behandling af malaria
Dutch	Beta-artemether / lumefantrine (poeder voor orale suspensie)	Behandeling van malaria
Estonian	Beta-artemeeter / lumefantriin (suukaudse suspensiooni pulber)	Malaaria ravi
Finnish	Beta-artemeteri / lumefantriini (jauhe oraalisuspensiota varten)	Malarian hoito
French	Bêta-artéméther / luméfantrine (poudre pour suspension buvable)	Traitement du paludisme
German	Beta-artemether / lumefantrin (Pulver zur Herstellung einer Suspension zur Einnahme)	Behandlung der Malaria
Greek	β-αρτημαιθέρας / λουμεφαντρίνη (κόνις για πόσιμο εναιώρημα)	Θεραπεία της ελονοσίας
Hungarian	Beta-arteméter / lumefantrin (por belsőleges szuszpenzióhoz)	Malária kezelése
Italian	Beta-artemetero / lumefantrina (polvere per sospensione orale)	Trattamento della malaria
Latvian	Beta-artemeters / lumefantrīns (pulveris iekšķīgi lietojamas suspensijas pagatavošanai)	Malārijas ārstēšana
Lithuanian	Beta-artemeteras/lumefantrinas (milteliai geriamajai suspensijai)	Maliarijos gydymas
Maltese	Beta-artemether / lumefantrine (trab għal suspensjoni orali)	Kura tal-malarja
Polish	Beta-artemeter / lumefantryna (proszek do sporządzania zawiesiny doustnej)	Leczenie malarii
Portuguese	Beta-artemetero / lumefantrina (pó para suspensão oral)	Tratamento da malária
Romanian	Beta-artemeter / lumefantrină (pulbere pentru suspensie orală)	Tratamentul malariei
Slovak	Beta-arteméter / lumefantrín (prášok na perorálnu suspenziu)	Liečba malárie
Slovenian	Beta-artemeter / lumefantrin (prašek za peroralno suspenzijo)	Zdravljenje malarije
Spanish	Beta-artemeter / lumefantrina (polvo para suspensión oral)	Tratamiento del paludismo
Swedish	Beta-artemeter / lumefantrin (pulver till oral suspension)	Behandling av malaria
Norwegian	Beta-artemeter / lumefantrin (pulver til mikstur, suspensjon)	Behandling av malaria
Icelandic	Beta-artemether / lumefantrín (mixtúruduft, dreifa)	Til meðferðar á malaríu