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EPAR summary for the public

Bosulif

bosutinib

This is a summary of the European public assessment report (EPAR) for Bosulif. It explains how the Agency assessed the medicine to recommend its authorisation in the EU and its conditions of use. It is not intended to provide practical advice on how to use Bosulif.

For practical information about using Bosulif, patients should read the package leaflet or contact their doctor or pharmacist.

What is Bosulif and what is it used for?

Bosulif is an anticancer medicine that contains the active substance bosutinib. It is used to treat adults with chronic myeloid leukaemia (CML), a cancer of the white blood cells in which granulocytes (a type of white blood cell) start growing out of control.

Bosulif is used in patients who are 'Philadelphia-chromosome positive' (Ph+). This means that some of the patient's genes have re-arranged themselves to form a special chromosome called the Philadelphia chromosome. Bosulif is used to treat three stages of CML called 'chronic phase', 'accelerated phase' and 'blast phase'. It is only used when the CML has already been treated with one or more tyrosine kinase inhibitors (medicines for CML which work in a similar way to Bosulif) and when the tyrosine kinase inhibitors called imatinib, nilotinib and dasatinib are not considered appropriate treatment options.

Because the number of patients with CML is low, the disease is considered 'rare', and Bosulif was designated an 'orphan medicine' (a medicine used in rare diseases) on 4 August 2010.

How is Bosulif used?

Bosulif is available as tablets (100 mg and 500 mg). It can only be obtained with a prescription and treatment should be started by a doctor who is experienced in the diagnosis and treatment of CML. The recommended dose is 500 mg once per day with food. The dose may be increased up to

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600 mg/day or may need to be reduced or interrupted, depending on the patient's response to treatment and the side effects they experience. For further information, see the package leaflet.

How does Bosulif work?

The active substance in Bosulif, bosutinib, is a tyrosine kinase inhibitor. It blocks the action of certain enzymes known as Src and Bcr-Abl tyrosine kinases, which can be found in some receptors on the surface of leukaemia cells where they are involved in stimulating the cells to divide uncontrollably. By blocking their action, Bosulif helps to control cell division, thereby controlling the growth and spread of the leukaemia cells in CML.

What benefits of Bosulif have been shown in studies?

Studies have been carried out to show that Bosulif is effective at reducing the proportion of white blood cells with the Philadelphia chromosome. Bosulif was investigated in one main study involving 570 patients with Ph+ CML who had previously been treated with at least one tyrosine kinase inhibitor. Bosulif was not compared with another treatment. The data on 52 patients were considered as the main evidence from the study as these patients were identified as having an unmet medical need, because other tyrosine kinase inhibitors were not considered appropriate treatment options for them due to disease resistance or the risk of severe side effects. Among these patients, 36 had chronic phase CML and 16 patients had either accelerated or blast phase CML.

The main measure of effectiveness was the number of patients who had at least a 'major cytogenetic response' (where the proportion of white blood cells with the Philadelphia chromosome fell below 35%) after six months of Bosulif treatment. Effectiveness was also measured in other ways including 'haematological response' (a return to normal of the number of white cells in the blood). Bosulif treatment was effective in patients with an unmet medical need: 18 out of 36 patients with chronic phase CML had a 'major cytogenetic response', while 7 out of the 16 patients with advanced (accelerated or blast phase) CML also had a sufficient response based on other measurements.

What are the risks associated with Bosulif?

The most common side effects with Bosulif (which may affect more than 1 in 5 people) are diarrhoea, nausea (feeling sick), thrombocytopenia (low blood platelet counts), vomiting, abdominal pain (stomach ache), rash, anaemia (low red blood cell counts), pyrexia (fever) and increased levels of liver enzymes. The most serious side effects (which may affect more than 1 in 20 people) are thrombocytopenia, anaemia, diarrhoea and rash as well as neutropenia (low levels of neutrophils, a type of white blood cell) and increased levels of liver and digestive enzymes. For the full list of all side effects reported with Bosulif, see the package leaflet.

Bosulif must not be used in patients with reduced liver function. For the full list of restrictions, see the package leaflet.

Why is Bosulif approved?

The Agency's Committee for Medicinal Products for Human Use (CHMP) decided that Bosulif's benefits are greater than its risks in a sub-group of patients with an unmet medical need and recommended that it be approved for use in the EU. The Committee considered that Bosulif had been shown to be effective at controlling CML in these patients and, although it had important side effects, its safety profile was acceptable as a last treatment option in these patients.

Bosulif has been given 'conditional approval'. This means that there is more evidence to come about the medicine, which the company is required to provide. Every year, the European Medicines Agency will review any new information that becomes available and this summary will be updated as necessary.

What information is still awaited for Bosulif?

Since Bosulif has been granted a conditional approval, the company that markets Bosulif will carry out and submit the results of a larger study with Bosulif in patients with Ph+ CML previously treated with one or more tyrosine kinase inhibitors and for whom imatinib, nilotinib and dasatinib are not considered appropriate treatment options.

What measures are being taken to ensure the safe and effective use of Bosulif?

A risk management plan has been developed to ensure that Bosulif is used as safely as possible. Based on this plan, safety information has been included in the summary of product characteristics and the package leaflet for Bosulif, including the appropriate precautions to be followed by healthcare professionals and patients.

Other information about Bosulif

The European Commission granted a marketing authorisation valid throughout the European Union for Bosulif on 27 March 2013.

The full EPAR for Bosulif can be found on the Agency's website: ema.europa.eu/Find medicine/Human medicines/European public assessment reports. For more information about treatment with Bosulif, read the package leaflet (also part of the EPAR) or contact your doctor or pharmacist.

The summary of the opinion of the Committee for Orphan Medicinal Products for Bosulif can be found on the Agency's website: ema.europa.eu/Find medicine/Human medicines/Rare disease designation.

This summary was last updated in 03-2013.