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EPAR summary for the public

Inductos

dibotermin alfa

This is a summary of the European public assessment report (EPAR) for Inductos. It explains how the Committee for Medicinal Products for Human Use (CHMP) assessed the medicine to reach its opinion in favour of granting a marketing authorisation and its recommendations on the conditions of use for Inductos.

What is Inductos?

Inductos is a kit for implant. The kit consists of a powder containing the active substance, dibotermin alfa, a solvent and a matrix (collagen sponge).

What is Inductos used for?

Inductos is used to help new bone develop. It can be used in the following situations:

- lower back spine fusion surgery. This is a type of surgery used to relieve back pain due to a damaged disc where the disc between two vertebrae (the bones in the spine) is removed and the vertebrae are fused (joined) together. Inductos is used together with approved medical devices that correct the position of the spine. In this type of surgery, Inductos can be used instead of an autogenous bone graft (bone taken from one part of a person's body and placed in another part of the body). Inductos is used in adults who have been treated for at least six months for back pain due to a damaged disc but have not had an operation.
- surgery to heal fractures (breaks) of the tibia (shin bone). Inductos is used in addition to standard treatment and care. It is only used when the nail to fix the bone does not need 'reaming' (drilling to make room for nail placement).

The medicine can only be obtained with a prescription.

How is Inductos used?

Inductos should be used by a qualified surgeon. Inductos is made up into a solution before use, applied to the matrix and left for at least 15 minutes (but no more than two hours). The matrix is then cut, if

30 Churchill Place ● Canary Wharf ● London E14 5EU ● United Kingdom
Telephone +44 (0)20 3660 6000 **Facsimile** +44 (0)20 3660 5555
Send a question via our website www.ema.europa.eu/contact

needed, to the correct size before use. Generally one kit is sufficient. For lower back spine fusion, the damaged disc between the vertebrae is removed and replaced with one or more medical devices and Inductos. The medical devices fix the position of the vertebrae, and Inductos encourages bone to grow between the two vertebrae to join them permanently in the correct position. For a fractured tibia, Inductos is placed around the broken bone to aid healing.

How does Inductos work?

The active substance in Inductos, dibotermin alfa, acts on the bone structure. It is a copy of a protein called bone morphogenetic protein 2 (BMP-2), which is produced naturally by the body and helps with the formation of new bone tissue. When implanted, dibotermin alfa stimulates the bone tissue around the matrix to make new bone. The newly formed bone grows into the matrix, which then degrades. Dibotermin alfa is produced by a method known as 'recombinant DNA technology': it is made by cells that have received a gene (DNA) which makes them able to produce dibotermin alfa. The replacement dibotermin alfa acts in same way as BMP-2 produced naturally by the body.

How has Inductos been studied?

Inductos has been studied in 279 patients having lower back spine fusion. Spinal fusion using Inductos was compared with fusion using a bone graft removed from the hip during surgery. The main measure of effectiveness was fusion of the vertebrae confirmed by X-ray, and improvement in the pain and disability reported by the patient, measured two years after surgery.

Inductos has been studied in 450 patients with a fractured tibia. Inductos was compared with standard care. The main measure of effectiveness was the number of patients who did not need further treatment for their fractured tibia (such as a bone graft or changes to the nail used to fix the bones together) in the year following surgery.

What benefit has Inductos shown during the studies?

In spinal fusion, Inductos was as effective as bone grafts. After two years, 57% of the patients treated with Inductos (69 out of 122) had responded to treatment, compared with 59% of the patients treated with a bone graft (78 out of 133).

Additional studies and analysis of data from the published literature showed that Inductos was more effective than bone graft at inducing fusion of the lower back vertebrae, irrespective of the surgical technique or the type of approved medical device used to hold the bone in position.

In patients with a fractured tibia, using Inductos in addition to standard care was more effective than standard care alone in reducing the risk of treatment failure. Of the patients in the standard care group, 46% needed a further intervention within a year to repair their fracture, while the proportion was 26% for those also receiving Inductos.

What is the risk associated with Inductos?

The most common side effects with Inductos (seen in more than 1 patient in 10) are radiculopathic events (problems occurring at or near the root of the nerve, along the spine, resulting in pain, weakness, numbness, or difficulty controlling specific muscles) when used in spine surgery, and localised infection when used in tibia fracture surgery. The most severe side effect is localised oedema (swelling at the surgery site) when used in upper spine (neck) surgery. For the full list of all side effects reported with Inductos, see the package leaflet.

Inductos must not be used in the following situations:

- patients who are still growing;
- patients diagnosed with or being treated for cancer;
- patients with an active infection at the surgery site;
- patients with an inadequate blood supply at the fracture site;
- treating a fracture that is related to a disease such as Paget's disease or cancer.

For the full list of restrictions with Inductos, see the package leaflet.

Why has Inductos been approved?

The Agency's Committee for Medicinal Products for Human Use (CHMP) decided that the benefits of Inductos are greater than its risks and recommended that it be approved for use in the EU. The CHMP considered that Inductos is effective in single-level lumbar spine fusion as a substitute for autogenous bone graft and for the treatment of acute tibia fractures in adults, as an adjunct to standard care. Patients undergoing treatment with Inductos may be at risk of heterotopic ossification (the growth of bone in abnormal places like soft tissue); this risk is considered to be manageable with the proposed risk minimisation measures.

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

A risk management plan has been developed to ensure that Inductos 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 Inductos, including the appropriate precautions to be followed by healthcare professionals and patients.

In addition, the company that markets Inductos will make sure that educational material is available in all Member States for all healthcare professionals expected to use the medicine. This material will include information on the risk of heterotopic ossification and the potential risk of medication errors and incorrect use of Inductos.

Other information about Inductos

The European Commission granted a marketing authorisation valid throughout the European Union for Inductos on 9 September 2002.

The full EPAR for Inductos 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 Inductos, read the package leaflet (also part of the EPAR) or contact your doctor or pharmacist.

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