



Safeprot: Device for prosthesis disinfection.

Device and procedure for the intraoperative disinfection of biofilm-forming prostheses.



Medical need

Currently, the formation of bacterial biofilms in bone implants represents a post-surgical complication that causes chronic infections and protects bacterial colonies against antibiotics. Traditional treatments for infections in bone prostheses are complex, prolonged and expensive. For example, the treatment of infections in knee prostheses has an estimated global health care cost of about twenty billion dollars, and in many cases it is necessary to replace the affected prosthesis.

Technology

The device is an intraoperative disinfection system for bone prostheses that weakens biofilms and eliminates bacterial infections by means of a bioelectric effect. It is mainly designed for knee prosthesis surgeries, although it can be adapted to other types of prostheses. Its operation is based on the selective application of low intensity currents on the surface of the prosthesis, which can be optionally combined with the subsequent application of antibiotics.

Opportunity

Prevalence



Some 3M hip and knee prostheses are implanted each year. The incidence of infection is around 2%.

Market



Cost of one-stage prosthetic replacement: \$43K - \$134K
Cost of two-stage prosthetic replacement: \$128K - \$135K

Other solutions



Prosthetic replacement in one or two stages.

Results

Currently, in vitro disinfection tests have been carried out by generating biofilms in knee prostheses, subsequently treated with the device. A reduction of approximately 98% of CFU has been observed. Studies are currently being carried out on cadavers with knee prostheses.

Roadmap

IBIMA plataforma BIONAND is looking for a partner to further develop the technology through a co-development or licensing agreement.



Patent:

National and PCT patent applications.
Prioridad: 02/06/2022



Team:

IBIMA Plataforma BIONAND research group in Innovative Therapies and New Technology in the Musculoskeletal System

Contact:

Unidad de Innovación y Transferencia de Tecnología de IBIMA Plataforma BIONAND
transferencia@ibima.eu 952 36 76 00 @ www.ibima.eu

