

Perimedi, the World's First Peri-Implantitis Medication Developed by MXBIO



About the Company

MXBIO is a venture-certified company founded in June 2018. With eighteen employees including the CEO, the company is developing Perimedi, the world's first medication for treating peri-implantitis. MXBIO has applied for a patent with its product, with Phase III clinical trial scheduled to end in September 2024, followed by marketing authorization.

Background

The number of periodontal disease patients gradually grow from the age of 30, with more than 90% of those aged 60 or older suffering from the disease. As of 2023, the number of patients with periodontal disease exceeded 18.83 million, causing dental implant removals to reach to as many as 223,000. The number of dental implants increased along with the growing number of patients with periodontal disease, and the number of patients who develop peri-implantitis after implantation is also growing. Peri-implantitis, a new type of periodontal disease, has been reported repeatedly in the medical community, but the world has yet to find an effective treatment. In light of the urgent need for developing and commercializing periodontal treatments, MXBIO is developing three pipelines of dental medicines and aims to provide innovative solutions to periodontal disease with its products. MXBIO's ultimate goal is to reduce the number of implant removal surgeries.

About the Product

Perimedi Dental Ointment ("Perimedi") is made by combining two types of antibiotics—minocycline hydrochloride and metronidazole benzoate—and is developed specifically for treating peri-implantitis. Each of these single-component antibiotics are used for treating periodontal disease, but is ineffective in treating peri-implantitis.

MXBIO's product is unique in that it is the first dental multi-antibiotic ointment made by combining two antibiotics, minocycline and metronidazole). Unlike existing products that only contain a single component, it is differentiated by its great effectiveness in treating peri-implantitis. Developed to tackle the therapeutic limitations of single-component peri-implantitis treatments, Perimedi provides better therapeutic effects than existing single-component antibiotics, as well as ensuring safety and stability as a pharmaceutical product. The composition of the ointment has been optimized to ensure that the compound antibiotic ointment can be applied to the affected area and effectively maintain its efficacy. The manufacturing process and conditions at the lab scale (scale of 1 liter, 1,600 ointments manufactured) have been optimized, and research clinical trials have confirmed that it is more effective than competing products in treating peri-implantitis.

To compare the quality of peri-implantitis treatments, MXBIO compared Perimedi and a conventional

single-ingredient dental ointment in a Phase II clinical trial with a preclinical peri-implantitis model. The effectiveness of treatment was compared by measuring periodontal pocket depth, inflammation, and radiological reading of bone loss improvement. In the preclinical peri-implantitis model, Perimedi and the conventional product were applied once a week for four times after inducing peri-implantitis in mongrel dogs, and the each product's effectiveness in treating peri-implantitis was compared for eight weeks. The result shows that Perimedi eliminated all inflammation and improved bone loss at the implant site at twelve weeks after treatment. In the conventional product, the inflammation was not eliminated and the bone loss around the implant remained unhealed. Yellow arrows indicate areas of inflammation and bone loss.

Perimedi is currently in Phase 3 clinical trials, which is expected to be completed in September 2024. MXBIO is also preparing to apply for marketing authorization. The ointment can also be used for treating periodontal disease as well as peri-implantitis.

Competitive Edge and Business Strategy

When it comes to treating peri-implantitis, the only comparable product is a traditional single-ingredient product. Periocline made by Japan's Sunstar is used as the golden standard for dental ointments and is sold on the market at around 25,000 won. MXBIO plans to market Perimedi at a lower price range between 20,000 and 22,000 won to ensure the product's price competitiveness.

Perimedi is the first multi-substance antibiotic ointment developed to treat peri-implantitis. As such a multi-substance antibiotic ointment is unprecedented, and its superiority over existing products has been confirmed through clinical and preclinical trials, MXBIO is expecting Perimedi to be a market success.

Perimedi is in the pre-approval stage, and MXBIO has already held preliminary contract and delivery meetings in China (CCdental) and the United States (Tri-state Community Healthcare Clinic Center).

Perimedi was developed for human use, but it can also be used for treating animals with periodontal disease. Perimedi can also be used as a veterinary medicine as



[Perimedi: Product Photos]

animal studies have confirmed its effective in relieving inflammation and treating severe periodontal disease symptoms. MXBIO is looking to enter both human and veterinary markets with Perimedi.

Future Plans

- MXBIO is in talks with potential partners to enter the market separately for human and animal use. It is discussing with Huons for domestic distribution and with the CCdental Group for distribution in the Chinese market.
- Contracts signed for distribution in the US and Thailand.
- For marketing Perimedi as a veterinary medicine, MXBIO signed an MOU with ONHEAL, a pet care provider, to launch Perimedi as a veterinary medicine and transfer technology overseas.

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* The opinions expressed in this article are the author's own and do not reflect the views of KOTRA.

