

Streszczenie w języku angielskim

Difficult-to-heal wounds are a significant clinical problem and a challenge in medical practice. Most often wounds arise because of venous insufficiency, blood circulation disorders, diabetes complications, burns, as well as in the course of rare diseases

such as *Epidermolysis Bullosa* (EB). The presented study presents a biological dressing in

the form of acellular, allogeneic, radiation sterilized skin colonized with stem cells derived

from Whorton's jelly. This dressing, classified as an advance medical product (ATMP),

offers hope to patients with chronic wounds of various etiology.

The dissertation consists of four publications, one chapter of the book, and three articles

that make up the series of publications. They assess the safety and effectiveness of

biological dressings in the treatment of chronic wounds. They present the results concerning the use of acellular allogeneic skin collected from the deceased donor,

colonized with stem cells in the treatment of chronic wounds, based on the example of

patients with EB.

Immunohistochemical and histological examinations as well as electron and confocal microscopy showed infiltration of the host cells and neovascularization of the

biological dressing. Moreover, the dressings were characterized by low immunogenicity,

confirmed by histological tests and the proliferation of T lymphocytes *in vitro*.

Healing or

reduction of the wound area was observed during the follow-up period, as well as a

reduction in pain and itching among the patients in the study.

The obtained results prove the effectiveness of biological dressing in the form of acellular, allogeneic skin inhabited by stem cells in the treatment of wounds in EB. Further

research on biological dressing among patients with chronic wounds of various etiologies may contribute to the improvement of surgical treatment of difficult-to-heal wounds and the improvement of the patients' quality of life.