

THE EFFECTS OF SMART BANDAGES ON ACCELERATING WOUND HEALING

BASSAM S. H. MUSLEH (*6th year student Gomel State medical University*)
Scientific supervisor – Marwan F.S.H. AL-Kamali, Ph.D., Associate Professor

Relevance: The scarcity of conventional wound care techniques has prompted the creation of next-generation smart wound dressings, which can assist medical professionals in making prompt and precise treatment decisions to impede tissue healing and better understand the true state of the wound during the healing process [1]. To accomplish this, wearable sensors that track biomarkers related to wounds, wireless transmission methods, and sophisticated drug delivery systems can all be integrated into a single wound dressing to create an all-in-one solution that enables remote real-time monitoring and early diagnosis.

Goal of the work: To explore and understand how smart bandages innovative technology can positively impact the wound healing process. By examining the advancements in smart bandages, their features, and the underlying mechanisms, determine the potential benefits of using these intelligent dressings in clinical settings.

Result analysis – Chronic non-healing wounds are the primary cause of limb amputation and pose serious healthcare challenges to a large number of people. They also place a heavy financial burden on healthcare providers. Chronic wounds are dynamic despite being permanently inflamed, and effective treatment necessitates detecting anomalies, giving the right medications and growth factors, and adjusting the surrounding conditions. We'll talk about technologies designed to actively monitor the wound environment in this article. We also review automated or semi-automated systems that can react to the wound environment and highlight drug delivery tools that have been integrated with bandages to enable precise temporal and spatial control over drug release.

Conclusion. The conclusions Clinical practice is predicted to change as automated bandages and telemedicine become more common, particularly in rural areas. More automated dressings that are able to sense and administer therapeutics automatically or semi-automatically would greatly enhance patient comfort and lower the risks connected with wound care. Better power sources, dependable sensors, and dependable networks for data management are still needed, dependent on a variety of research endeavors, and not yet developed.

Литература

Литература

1. Аль-Камали, М. Ф. С. Х. Структурообразование SiO₂-ксерогелей, содержащих соединения меди различного фазового состава / М. Ф. С. Х. Аль-Камали, А. А. Алексеенко, О. А. Титенков // Проблемы физики, математики и техники. – 2020. – № 3 (44). – С. 7–12.