عنوان مقاله:
Tissue engineering and regenerative medicine

محل انتشار:
چهارمین کنگره بین المللی و ششمین کنگره ملی زخم و ترمیم بافت (سال: 1398)

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خلاصه مقاله:
Background and objective: Tissue engineering evolved from the field of biomaterials development and refers to the practice of combining scaffolds, cells, and biologically active molecules into functional tissues. The goal of tissue engineering is to assemble functional constructs that restore, maintain, or improve damaged tissues or whole organs. Artificial skin and cartilage are examples of engineered tissues that have been approved by the FDA; however, currently they have limited use in human patients. Regenerative medicine is a broad field that includes tissue engineering but also incorporates research on self-healing – where the body uses its own systems, sometimes with help foreign biological material to recreate cells and rebuild tissues and organs. The terms tissue engineering and regenerative medicine have become largely interchangeable, as the field hopes to focus on cures instead of treatments for complex, often chronic, diseases.Search methods: In the context of this overview, 27 articles were used between the years 2010 through the end of 2018 using the keywords of PubMed, Google scholar search engines.Results: Tissue engineering plays a relatively small role in patient treatment. Supplemental bladders, small arteries, skin grafts, cartilage, and even a full trachea have been implanted in patients, but the procedures are still experimental and very costly.Conclusion: While more complex organ tissues like heart, lung, and liver tissue have been successfully recreated in the lab, they are a long way from being fully reproducible and ready to implant into a patient. These tissues, however, can be quite useful in research, especially in drug development. Using functioning human tissue to help screen medication candidates could speed up development and provide key tools for facilitating personalized medicine while saving money and reducing the number of animals used for research.

کلمات کلیدی:
Tissue engineering, Organ tissues, Regeneration