Artificial Intelligence in Burn Care: Diagnosis, Treatment, and Wound Management; A Scoping Review

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ABSTRACT

Introduction: Artificial intelligence (AI) is an innovative field with the potential to improve burn care. This article provides an updated review of machine learning and the application of AI in burn care.

Search Strategy: A systematic search was carried out on the Web of Science, Science Direct, PubMed databases, and Google Scholar for English-language articles using the keywords "Artificial Intelligence," "Burns," "Machine Learning," and "Wound Healing" that have been done on human burns and used machine learning. Articles were reviewed quantitatively and qualitatively for burn depth and segmentation, Burn treatment, and wound care.

Results: In total, 29 articles were finalized for data extraction. The studies have generally been focused on burn depth and segmentation (70%), burn treatment (31%), and burn wound care (10%). Neural networks were the most common machine learning algorithm employed for 78% of the studies.

Conclusion and Discussion: AI has a significant role in managing and treating burn patients. However, AI requires further validation in prospective observational studies. In this regard, randomized clinical trials have evidenced the clinical and economic impacts. After acquiring evidence, AI's application will be advanced and widely accepted in burn care. Level I/II evidence is required to robustly prove clinical and economic impacts.