



Research Week 2021

Topical Timolol for treatment of chronic wounds: A systematic review

Cornwell, David BS; Chrea, Bopha MD; McLafferty, Robert MD MBA FACS
OHSU Department of Orthopaedics and Rehabilitation
OHSU Department of Vascular Surgery

Keywords

Timolol, beta antagonist, chronic wounds, wound care, topical treatment, diabetic foot ulcer

Abstract

Background

Chronic wounds, defined as wounds which have not healed over an expected 6-week timeframe, are a common and costly burden among individuals of all ages and backgrounds. Current estimations of disease burden indicate that 2% of the United States (US) population is affected by chronic wounds. Many interventions have been proposed to address the burden of chronic wounds, including hydrocolloid gels, collagen, anti-fungal therapy, and non-adhesive bandages. There remains significant debate over which wound care products are truly efficacious. In recent years, a growing body of evidence has emerged which promotes topical timolol as effective treatment of chronic wounds. To date, however, there exists limited consensus on timolol's efficacy and safety in this setting. This project seeks to identify and systematically review the current literature on the use of timolol in the treatment of chronic wounds.

Methods

A systematic review of current literature on the application of topical timolol for chronic wounds in adults was performed. Two researchers (D.C., Z.G.) searched the electronic databases OVID MEDLINE, PUBMED, EMBASE, Cochrane Central Register of Controlled Trials (CENTRAL), and SCOPUS. Studies eligible for inclusion in this review were randomized controlled trials, clinical trials, and observational studies of at least 6 weeks in duration. Search results were checked by both reviewers independently, and conflicts on inclusion were discussed with a third researcher for resolution (R.M.). Only full text reports regarding adult human subjects published in the English language were included. Two reviewers are independently extracting data from eligible articles for analysis.

Results

Protocol was accepted to PROSPERO. During review, 874 potentially eligible articles were identified from the database search. 695 original articles were identified after duplicates were removed. 15 articles were selected for full text evaluation. Retrospective citation review of these articles revealed 1 additional study for inclusion. Overall, 3 articles met inclusion criteria for analysis: 2 RCTs and 1 observational study. Data extraction is ongoing. Preliminary results support efficacy and safety of timolol in treatment of chronic wounds.