



## Treatment of keloids; what's news?

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Keloids are still therapeutic glitches, mostly disfiguring lesions which cause physical, functional and psychological burdens. Most patients with keloids are worried about cosmetic, some have grievances of itchy pain or a burning sense around them, though. The firmness can range from pliable to rigid. Most lesions tend to nurture gradually over a few months to a year. Most of them finally discontinue growing and stay unchanging or even withdraw to some extent<sup>[1,3]</sup>.

No particular therapeutic modality is best for all lesions. The place, extent, penetration of the lesion, age of the patients and the previous reaction to treatments conclude the type of next step of therapy. The main key would be prevention, but intralesional steroid injections are usually the first-line strategy in the treatment of restricted keloid or hypertrophic scars. Other currently used treatments consist of occlusive silicon bandages, compression therapy, cryotherapy, surgical excision, radiation, laser surgery, interferons (IFN), 5-fluorouracil (5-FU), retinoic acid, doxorubicin, bleomycin, verapamil, retinoic acid, imiquimod 5% cream, tamoxifen, tacrolimus, botulinum toxin injection, hydrogel scaffolding, and over-the-counter treatments (such as onion extract, Lemon Juice, Baking Soda, and the combination of hydrocortisone, silicon, and vitamin E)<sup>[4]</sup>.

Some promising treatments comprise anti-angiogenic factors, such as the inhibitors of vascular endothelial growth factor (VEGF) (for example bevacizumab), inhibitors of mannose-6-phosphate (M6P), combination of butyrate and docosahexaenoic acid, topical captopril, and phototherapies such as: (photodynamic therapy [PDT], intense pulsed light [IPL], ultraviolet A [UVA]-1 therapy, narrowband ultraviolet B [UVB] therapy). Inhibitors of transforming growth factor (TGF)-beta, inhibitors of tumor necrosis factor (TNF)-alpha (etanercept), recombinant human epidermal growth factor (rhEGF), and recombinant human interleukin (rhIL)-10 are some other newer modalities, which are focused at reducing collagen production<sup>[4,5]</sup>.

A new study of keloids reveals that combined therapy of intralesional triamcinolone and verapamil injections results in noteworthy scar improvement with a long-term unchanging result<sup>[6]</sup>.

Topical captopril could be considered as a prospective

therapy for keloid lesions<sup>[5]</sup>. According to a recent study, captopril may decrease the expression of angiotensin, platelet-derived growth factor (PDGF), transforming growth factor beta 1 (TGF-β1) and heat shock protein 47 (HSP47), and more inhibit the proliferation and collagen production of fibroblasts in keloids, which were the key in keloid creation<sup>[7]</sup>. In another new research, favorable effects of the combination of 5-FU and verapamil merit further survey<sup>[8]</sup>.

Mesenchymal stem cells would be a valuable source in regenerative medicine, and the medium acquired from stem cells seemingly hinders inflammation. Keloids are made up of abnormal fibrosis, produced by fibroblasts in reaction of inflammation. In a study, the authors assessed if this medium from amnion-derived stem cells prevents proliferation and activation of keloid fibroblasts and is a capable keloid treatment for administration as a topical agent<sup>[9]</sup>. Another study revealed that keloid excision followed by brachytherapy for resistant keloids is better than intralesional cryotherapy, further research on the efficacy of intralesional cryotherapy for primary keloids is warranted, though. Brachytherapy is radiotherapy using a radioactive source<sup>[10]</sup>.

There are millions of patients in the world suffered from keloids. However, there is a loss of treaty in the treatment. Furthermore, keloid investigation has left legacies in comprehending of its pathogenesis.

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