

Summary and Conclusion

Scar may be defined as the new tissue that is formed during healing of the wound. Human soft tissue healing is basically non regenerative. That which is destroyed is not restored but replaced by a less well differentiated tissue (scar) (*Thomas,2004*).

Hypertrophic scars and keloids may follow local skin trauma or inflammatory skin disorders like laceration, tattoos, burns, injections, ear-piercing, vaccination, bites, acne, abscess or surgery. They are the sequences of uncontrolled synthesis and deposition of dermal collagen (*Mutalik, 2005*).

Keloid and hypertrophic scars are two kinds of abnormal scar formation in the skin. The mechanism that causes them is not fully understood, but it is thought to involve local histological factors in connection with a hereditary component in most cases (*Espana et al.,2001*).

Hypertrophic scars and keloid lead to significant morbidity as well as pruritus, pain, restriction of movement or cosmetic disfigurement. Keloids extend beyond the margins of the original wound, do not usually regress spontaneously, and tend to recur after excision, while hypertrophic scars do not expand beyond the boundaries of the initial injury and may undergo partial spontaneous resolution (*Alster et al.,2003*).

Hypertrophic scars and keloids are relatively common and important problems encountered in clinical practice. Despite many advances in the understanding of wound healing and scar formation, the treatment of these conditions is still controversial, there are several non

pharmacological methods of treating hypertrophic scars and keloids , but they have drawbacks like high cost (silicone gel sheeting) , poor efficacy (Surgery and laser therapy), recurrence (surgery) and adverse effects like malignancy (radiation therapy), pharmacological modes of treatment also have drawbacks like: tacrolimus, bleomycin, interferon alpha, 5 fluorouracil and triamcinolone. The prophylaxis is more effective (*copcu et al ., 2004*) .

The aim of this study was evaluation the efficacy and safety of verapamil in the treatment of hypertrophic scars and keloids in comparison with triamcinolone.

Thirty patients were recruited from Dermatology clinic of Benha University Hospital and Mehalla Public Hospital. They were divided into two groups.

Group I : received intralesional injection of triamcinolone (Kenacort) every 3 weeks..

Group II: received intralesional injection of verapamil (Isoptin) every 3 weeks.

In this study, the method of evaluation of treatment was the Vancouver score scale, which consisted of four variables : vascularity, pliability, height and pigmentation. Each variable has four to six possible scores . A total score ranges from 0 to 14, whereby a scor of 0 reflects normal skin (*Baryza and Baryza ,1995*).

The patients were followed up every 3 weeks for clinical assessment and to detect any complications before subsequent sessions.

The results of our study were as follows:

Regarding the Vancouver scar scale, There was statistically significant improvement in Vancouver score in the two groups after treatment (P-value < 0.05%).

In triamcinolone group, the Vancouver score before treatment was 9.533 ± 0.990 and after treatment, it was 1.333 ± 1.113 .

In verapamil group, Vancouver score before treatment was 9.733 ± 1.223 and after treatment it was 1.733 ± 1.944 .

The comparison between the two studied groups was non significant as regards the four variables of the Vancouver scale.

In our study there was a statistically significant negative correlations between Vancouver scale and the age of patients and the duration of lesions.

The improvement in Vancouver scale was not affected by the site of lesions.

There was no correlations between Vancouver scale and both patient's sex and skin type in both studied groups.

Regarding the side effects, Telangectasia and hyperpigmentation were documented in 2 patients (13.3%) in triamcinolone group. No side effects were reported during treatment in group II.

Regarding the cost of treatment, The cost of TAC injection was relatively lower than verapamil

The comparison between the two studied groups was non significant as regards the four variables of the Vancouver scale either before or after treatment.

In conclusion, the results of the present study suggest that verapamil is clinically safe for patients with hypertrophic scars and keloids. Injection of verapamil appears to be capable of inducing a rapid beneficial effect in the scars and keloids in the present study. It was also found to be less toxic than triamcinolone, causing a lower incidence of adverse drug reactions. Other advantages of verapamil include the considerably low cost of verapamil, which has implications for developing countries.

In addition, intralesional injection of triamcinolone and verapamil is a more feasible technique that can be applied in any outpatient setting without requiring special equipment.