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ORIGINAL ARTICLE

Skin graft secured by VAC (vacuum-assisted closure) therapy in chronic leg ulcers: A controlled randomized study

suppl. Informations

*Greffe cutanée sécurisée par VAC-thérapie (*vacuum-assisted closure*) dans les ulcères de jambe : une étude contrôlée randomisée*

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KEYWORDS
VAC therapy;
Chronic leg ulcer;
Skin graft;
Vacuum-associated closure

Summary
Introduction. — Leg ulcers are a common condition. There have been very few studies of combined therapy involving VAC (vacuum-assisted closure) and skin graft.
Methods. — We performed a randomized controlled trial of VAC therapy vs. hydrocolloid dressings over 5 days following autologous grafting on chronic leg ulcers. The primary objective was to assess the difference in success (defined as a reduction in wound area of at least 50% at 1 month) between the two dressing methods. Forty-six patients with ulcers present for over one month were included. Following a 7-day hospitalization period, follow-up was performed for 3 months on an outpatient basis.
Results. — Our study does not demonstrate a statistically significant difference, with a 45.8% success rate in the VAC group vs. 40.9% in the conventional dressing group ($P = 0.73$). In the venous ulcer group, the success rate was 57.9% for VAC vs. 40% for conventional dressings ($P = 0.3$). The difference in favor of VAC in this group was not statistically significant, most likely due to an insufficient number of patients studied.

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Conclusion. — Our study does not demonstrate superiority of VAC associated with skin graft over conventional dressings. We observed more complications with VAC (40%) than with conventional dressings (23%) ($P = 0.06$).

MOTS CLÉS
VAC-thérapie ;
Ulcère chronique de jambe ;
Greffe cutanée ;
Pression négative

Résumé
Introduction. — L'ulcère de jambe est une pathologie fréquente. Son traitement par l'association VAC-thérapie (*vacuum-assisted closure*) et greffe de peau a été peu étudié.
Méthodes. — Nous avons mené un essai contrôlé randomisé en ouvert comparant la VAC-thérapie à un pansement classique pendant les 5 jours suivant une autogreffe d'ulcère de jambe. L'objectif principal était d'évaluer la différence de succès entre les deux modalités de traitement, le succès étant défini par une réduction d'au moins 50 % de la surface de la plaie à un mois. Ont été inclus 46 patients, dont les ulcères évoluaient depuis plus d'un mois. Après 7 jours d'hospitalisation, le suivi était effectué en ambulatoire jusqu'à 3 mois.
Résultats. — La différence de succès entre les deux traitements n'est pas statistiquement significative, avec 45,8 % de succès dans le bras VAC contre 40,9 % dans le bras pansement classique ($p = 0,73$). Pour les ulcères veineux, le succès est de 57,9 % sous VAC-thérapie contre 40 % sous pansement classique ($p = 0,3$). La différence observée en faveur de la VAC dans ce groupe n'est pas statistiquement significative, probablement du fait d'un manque de puissance lié à un effectif insuffisant.
Conclusion. — Notre étude n'a pas montré de supériorité de la VAC sur la réduction de la plaie à un mois par rapport à un pansement classique de greffe. Nous avons observé plus de complications sous VAC (40 %) que sous pansement classique (23 %) ($p = 0,06$).

Chronic leg ulcers are a common disorder and an important public health concern [1]. The chief causes are venous insufficiency and arterial insufficiency, which may be associated. Treatment of ulcers of predominantly venous origin involves the use of compression hose. However, 35 to 50% of ulcers treated with compression alone do not heal at 6 months [2,3], with 20% failing to heal at 12 months [4]. Autologous skin grafting provides a therapeutic alternative in the epidermization phase [1].

VAC (vacuum-assisted closure) is a procedure designed to assist wound healing through the creation of continuous or discontinuous sub-atmospheric pressure, which has the effect of increasing blood flow to the wound and promoting angiogenesis and granulation tissue development [5]. The use of a negative physical pressure mechanism on grafts can enhance adhesion of the grafts by holding them firmly to the wound surface, while reducing maceration beneath the dressing through aspiration of exudates while maintaining a moist environment favorable to wound healing.

In the dermatology department of the Saint-Étienne University Hospital, skin grafts are routinely combined with VAC [5]. A prospective randomized study of VAC vs. conventional dressing after skin graft in leg ulcers demonstrated superiority of VAC [6], although it involved prolonged hospitalisation until complete cure, which is difficult to provide under standard daily practice. Given our experience and of the lack of scientifically tested data [7,8], we undertook a single-centre, prospective, randomised open clinical trial to study the efficacy of the VAC system compared with conventional dressing alone following skin grafting for leg ulcer.

Patients and methods

Primary study aim

The primary aim was to assess the efficacy of the VAC system on wound healing in the grafted area one month after grafting comparatively with the conventional dressing procedure (without VAC).

Secondary aims

The secondary study aims were to compare the following parameters between the two treatment groups:
- changes in pain assessed at D0, D1 and 1 month post-graft;
- score on the DLQI scale (Dermatology Life Quality Index) at D0, D5, 1 month and 3 months post-graft;
- AGGIR score (Autonomie Gérontologique Groupes Iso-Ressources — Gerontological Autonomy scale of the Iso-Ressources Group) at D0, 1 month and 3 months post-graft.