Multinational observational study on the performance, handling and safety of a new alginate wound dressing

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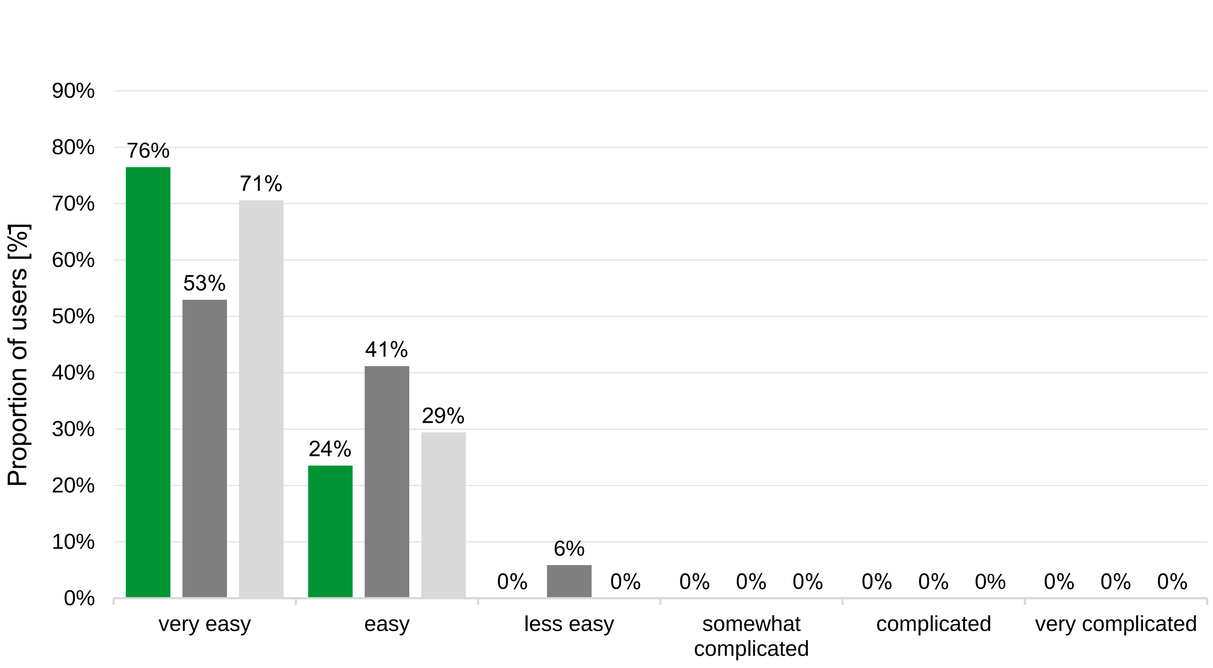
Introduction

Alginate dressings play an important role in modern wound care. Areas of application include exudate management, autolytic debridement and hemostasis. Users of the alginate dressings have high demands on performance, handling and safety. In order to meet these requirements, a new alginate wound dressing* was developed from a mixture of 80% alginate and 20% viscose. This is to ensure that the alginate does not completely gel in the wound and so does not disintegrate into several pieces when the dressing is changed but can be removed in one piece. In the study presented, the wound dressing was tested for the properties described.

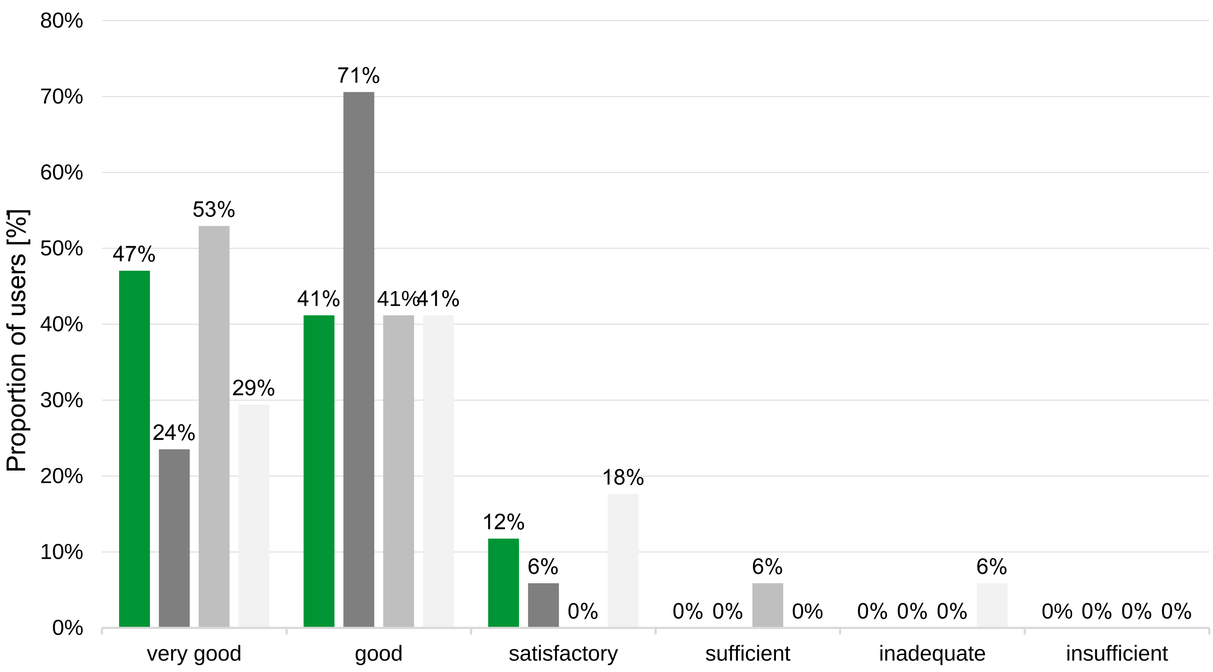
Method

An observational study was carried out in clinical as well as outpatient settings at a total of 17 clinical centers in Germany (n = 7), Austria (n = 6) and Poland (n = 4). The users (9 nurses, 5 wound care specialists, 2 physicians, and a district nurse) were asked to treat up to 8 patients with the new alginate according to the respective treatment guidelines for a period of at least 3 dressing changes or longer. Users were asked to fill out a patient-specific electronic questionnaire for each patient upon completion of treatment. A general electronic questionnaire was completed at the end of the study. All patients (n = 83; 49% female, 51% male) were adults (age 74.54 ± 15.05 years) and suffered from highly exuding wounds which were either pressure injuries (30%), arterial ulcers (12%), venous ulcers (29%), diabetic ulcers (14%) or postoperative wounds (14%). The wounds were either superficial (63%) or deep (37%). The users were asked to fill out an electronic questionnaire for each patient treated and a general one. The deep wounds were cavities (42%), open undermining (35%), and other unspecified wounds (23%). On average, the wounds were treated over a period of 35.06 ± 29.64 days. The average dressing change interval was 3.52 ± 2.47 days. Superabsorbent wound dressings (53%), wound foams (46%), elastic fixation bandages (28%) or short-stretch bandages (8%) were used as secondary dressings. Partly in combination. In one case (1%), no secondary dressing was used.



Graph 1: Ease of use

Proportion of users that rated the first application of the alginate ( ), the dressing change in general ( ) and the cutting when dry ( ). The first application of the alginate was rated very easy ($\bar{x}$ = 1.24). The general dressing change was rated as easy ($\bar{x}$ = 1.53) and cutting when dry was rated as very easy ($\bar{x}$ = 1.29).



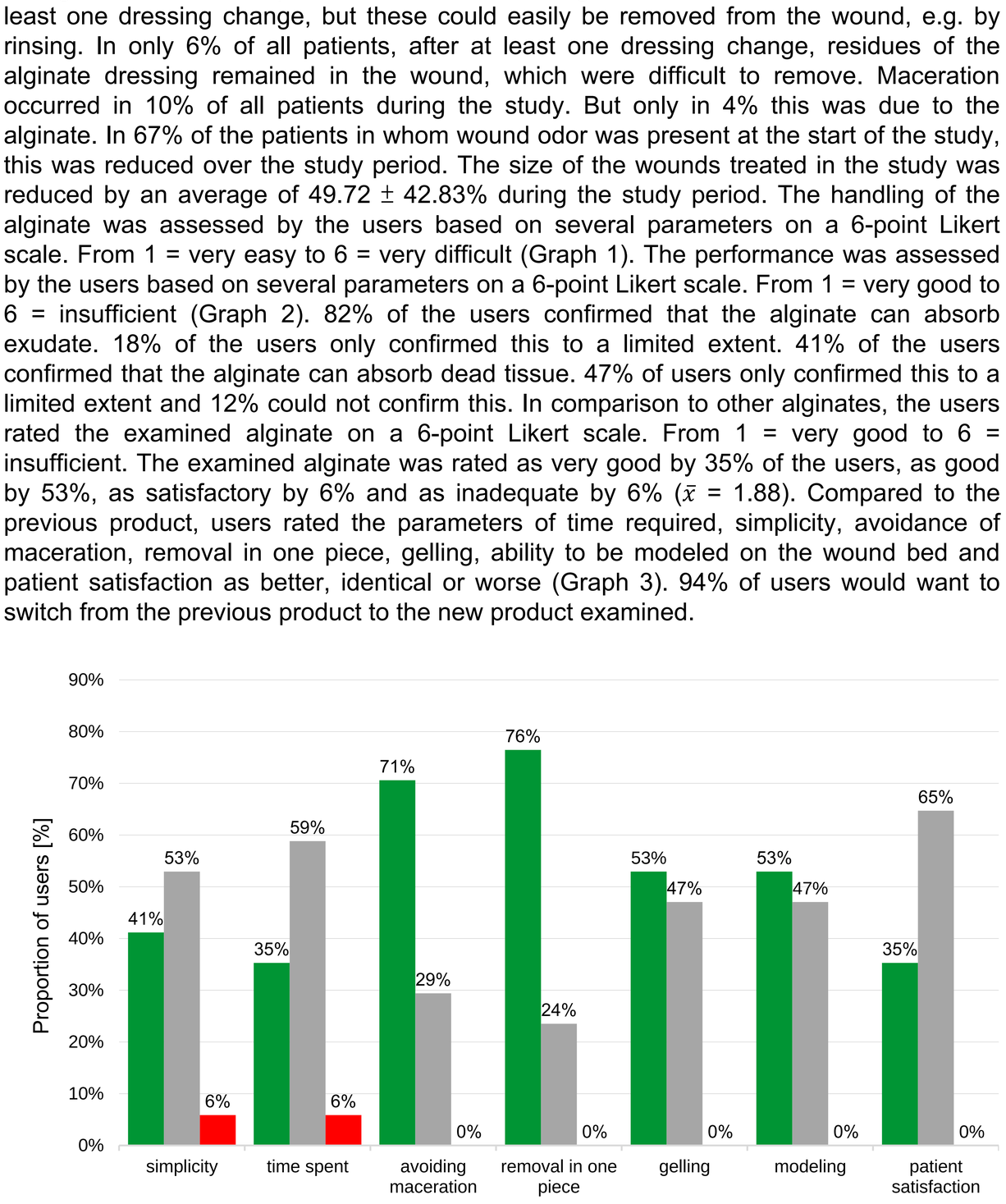
Graph 2: Performance

Proportion of users that rated the expenditure of time ( ), the adaptability to the wound bed in the dry state ( ) and gelled state ( ) and the support of the autolytic debridement ( ).

The expenditure of time was rated as good ($\bar{x}$ = 1.65). The adaptability to the wound bed in the dry state was rated as good ($\bar{x}$ = 1.82). The adaptability to the wound bed in the gelled state was rated as good ($\bar{x}$ = 1.59). The support of the autolytic debridement was rated as good ($\bar{x}$ = 1.94).

Results

The users were asked what goals they wanted to achieve by using the alginate. 75% wanted to achieve good exudate management. The goal of 73% of the users was to perform an autolytic debridement. 20% wanted to stop bleeding and 10% had other goals. Among these additional goals were the avoidance of infection, stabilization of the wound edge, stimulation of the growth of the granulation tissue or the epithelization. The treatment goals were achieved in 89% of all patients. In 81% of the patients, the alginate could be removed from the wound in one piece with all dressing changes. In a further 11% of the patients, the wound dressing remained in one piece, but was stuck to the wound base in at least one dressing change and could therefore not be removed in one piece. In another 4% of the patients, the alginate did not disintegrate either, but could not be removed from the wound in one piece for unknown reasons in at least one dressing change. Only in 4% of the patients, the alginate disintegrated into several pieces during at least one dressing change and therefore could not be removed in one piece. In 67% of all patients, no residues of the alginate remained in the wound when the dressing was changed. In 27% of the patients, residues of the alginate remained in the wound after at least one dressing change, but these could easily be removed from the wound, e.g. by rinsing. In only 6% of all patients, after at least one dressing change, residues of the alginate dressing remained in the wound, which were difficult to remove. Maceration occurred in 10% of all patients during the study. But only in 4% this was due to the alginate. In 67% of the patients in whom wound odor was present at the start of the study, this was reduced over the study period. The size of the wounds treated in the study was reduced by an average of 49.72 ± 42.83% during the study period. The handling of the alginate was assessed by the users based on several parameters on a 6-point Likert scale. From 1 = very easy to 6 = very difficult (Graph 1). The performance was assessed by the users based on several parameters on a 6-point Likert scale. From 1 = very good to 6 = insufficient (Graph 2). 82% of the users confirmed that the alginate can absorb exudate. 18% of the users only confirmed this to a limited extent. 41% of the users confirmed that the alginate can absorb dead tissue. 47% of users only confirmed this to a limited extent and 12% could not confirm this. In comparison to other alginates, the users rated the examined alginate on a 6-point Likert scale. From 1 = very good to 6 = insufficient. The examined alginate was rated as very good by 35% of the users, as good by 53%, as satisfactory by 6% and as inadequate by 6% ($\bar{x}$ = 1.88). Compared to the previous product, users rated the parameters of time required, simplicity, avoidance of maceration, removal in one piece, gelling, ability to be modeled on the wound bed and patient satisfaction as better, identical or worse (Graph 3). 94% of users would want to switch from the previous product to the new product examined.



Graph 3: Comparison to previous product

Proportion of users that rated the evaluated product either better ( ), identical ( ) or worse ( ) in comparison to the previous product.

Discussion

The handling as well as the performance of the product was rated as very easy or easy. In almost 90% of the patients, the treatment goals of the user could be achieved using the examined alginate. Although the alginate is not an antimicrobial wound dressing, it was able to reduce wound odor, which is usually caused by bacteria in the wound. This can be explained by the fact that a well-managed healing wound is less susceptible to infection. The alginate caused maceration in only 4% of the patients and in only 6% residues of the wound dressing that were difficult to remove remained in the wound. These low proportions show that the product is safe to use, especially when you consider that the data is from a real live study. One of the goals of the new development of the alginate was to prevent the alginate from completely gelling and thus to prevent it from disintegrating into several pieces when the dressing is changed. Since a disintegration into several parts only occurred in 4 patients, this goal has been achieved. Compared to the previous product, the examined alginate scores the same or better in the assessed parameters. In comparison to other alginates, the examined alginate performed well with the users. The fact that the users could be convinced of the product is also reflected in the fact that almost all users would like to switch to the new alginate.

Conclusion

With the newly developed alginate, a product could be created that meets the highest requirements in terms of handling, performance and safety. It separates well in comparison to other alginates and outperforms the previous product. The goal of preventing it from falling apart into several pieces has been achieved.

For more information on the product being tested, visit the L&R publication database.

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