Meeting the Challenge in Wound Exudate Management

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Abstract

Exudate management is a major concern in the treatment of a variety of wound types. The challenge often is to find products that are highly absorptive and cost effective yet still capable of creating a proper moisture environment to promote healing. This presentation will discuss the management of three very unique patients, each with Prader-Willi Syndrome, a complex, non-hereditary, birth defect involving an abnormality of the 15th chromosome. It is seen equally in males and females of all races. Its prevalence is estimated to be around 1/15,000. Manifestations of the syndrome include low muscle tone, short stature if not treated with growth hormone, incomplete sexual development, and a chronic feeding of hunger. This is coupled with a metabolism that utilizes drastically lower calories than normal and therefore can lead to excessive eating and the resulting obesity.

Introduction

Since the seminal work of George Winter in 1962, much has been written on the benefits of a moist environment in facilitating wound healing. The challenge often faces the wound care clinician however is that of maintaining a proper moisture balance and preventing the scale from tipping toward tissue maceration. Numerous products have subsequently been developed to address absorbency while attempting, at the same time, to minimize chances of tissue desiccation. These include various alginate, hydrofiber, and collagen based products. As new products enter the market, clinicians evaluate them on a variety of criteria. In each case, it is essential to consider the setting in which they are used, in addition to whether the dressings perform as reported in studies.

The following case studies report on a superabsorbent polymer dressing that was recently introduced to the U.S. market. It consists of a hypoallergenic, polypropylene outer layer which covers an inner layer of cellulose and super absorbent polymer. The dressing essentially functions much like a modern incontinence pad. The superabsorbent polymer granules absorb and enclose the exudate and prevent fluid release even when the dressing is exposed to pressure. The superabsorbent power also minimizes the need for frequent dressing changes thereby minimizing patient discomfort, reducing cost, and facilitating moist wound healing.

Prader-Willi Syndrome

Prader-Willi syndrome (PWS) is a complex, non-hereditary, birth defect involving an abnormality of the 15th chromosome. It is seen equally in males and females of all races. Its prevalence is estimated to be around 1/15,000. Manifestations of the syndrome include low muscle tone, short stature if not treated with growth hormone, incomplete sexual development, and a chronic feeding of hunger. This is coupled with a metabolism that utilizes drastically lower calories than normal and therefore can lead to excessive eating and the resulting obesity.

Conclusions

Controlling exudate in a chronic wound can prove challenging. While numerous products exist that can wick fluid away from a wound, problems develop when fluid level exceeds the dressing capacity or, where conversely, the fluid is allowed to dry and the condition needed to provide the most healing environment that is desired. Superabsorbent polymer dressings provide a unique answer to these problems. Not only are the dressings highly absorbent, but the collected moisture is situated over the wound bed and prevents tissue desiccation.

Three different and challenging cases have been presented that had failed to respond to standard care that is appropriate for wounds with lesser exudation. The addition of the superabsorbent polymer dressing provided an environment that not only facilitated wound healing, but also included ease of use, patient acceptance, and cost effectiveness, including the wound care regimen for these patients reduced the need for dressing changes by greater than 50% and readily gained patient acceptance. The absorptive power of the dressings was remarkable, and in one case, resulted in the complete healing of a recurrent ulcer that had been present for greater than three years.

Patient # 1

B. E., a 37 y.o. African American male who presented for management of a chronic, radiation lesions of the left lower extremity. The patient’s condition was complicated by his diagnosis of Prader-Willi Syndrome. On admission to the wound care center, he was noted to be of short stature and mildly obese. The patient was a non-smoker, socially good, but had a history of alcohol dependence.

The left leg was noted to be minimally edematous. The dorsalis pedis pulse was 2+ and capillary refill in the toes was good. Four superficial wounds were noted on the leg. They ranged in size from 1 to 15 cm and were due to chronic venous insufficiency complicated by rheumatoid arthritis. The dressing essentially functions much like a modern incontinence pad. The dressing was applied, secured with a layer of gauze and a tubular support stocking was worn whenever the application of the superabsorbent dressing. The dressing was changed daily until the wound had completely re-epithelialized. (Figure 6) The patient was then fitted with compression stockings and there has been no recurrence to date.

Patient # 2

K.M. is a 94 y.o. Caucasian female referred to our clinic for treatment of a nonhealing ulcer on the medial border of the left ankle. The patient indicated that the ulcer occurred after she stubbed her toe on a chair while bending over a table in the patient’s kitchen. The wound had been present for over two years and had failed to heal properly. The wound was measured and demonstrated a good granulation base but demonstrated no evidence of epithelialization.

The dressing regimen was changed to the superabsorbent polymer dressing. The dressing was applied, secured with a layer of gauze and the patient indicated that the ulcer had healed within two weeks and continued to heal until the ulcer had completely re-epithelialized. (Figure 6) The patient was then fitted with compression stockings and there has been no recurrence to date.

Patient # 3

K.M. is a 6 y.o. African American male referred to our clinic for treatment of a nonhealing ulcer on the median border of the left ankle. The patient indicated that the ulcer occurred after he stubbed his toe on a chair while bending over a table in the kitchen. On presentation, the ulcer was measured and demonstrated a good granulation base but demonstrated no evidence of epithelialization.

The dressing regimen was changed to the superabsorbent polymer dressing. The dressing was applied, secured with a layer of gauze and the patient indicated that the ulcer had healed within two weeks and continued to heal until the ulcer had completely re-epithelialized. (Figure 6) The patient was then fitted with compression stockings and there has been no recurrence to date.