

Evaluation of a SuperCore dressing on exuding chronic wounds

Dr. Charalambos Agathangelou, PhD in Medical Gerontology
Sofoullis Achilleos, R.N.
St. Demetrianos, Centre of Assisted Living, Rehabilitation and Wound Care,
Dhali, Nicosia, CYPRUS

INTRODUCTION

Wound exudate has a significant role in the process of wound healing due to its vital function in facilitating the diffusion of essential healing factors such as proteins, nutrients for epithelial cells, electrolytes, fibrinogen, leucocytes and fibrin. A small amount of exudate of this type found in acute wounds helps to maintain a moist wound environment and contributes to the healing process. However, in chronic wounds, those which have not healed within a period of six weeks, wounds became stagnated in the inflammatory phase, and the amount and composition of wound exudates changes³. As the wound exudate increases in chronic wounds, its components can contribute to the destruction of the extracellular matrix, mainly the increased levels of MMP¹. Therefore, excessive production of wound exudate not only affects the quality of life of the patients but also can cause leakage, soiling, maceration, odour and erosion of the peri-wound skin, discomfort and/or pain, all of which may also contribute to infection.

Aim
Investigate if improved exudate management by applying MPD-dressings using SuperCore* can lead to faster healing, prevent exudate related complications, and minimise cost of treatment².
SuperCore absorbent dressings are binder and adhesive free, and have a non-sagging superabsorbent core that contain a mix of natural fibers and sodium polyacrylate making them a potentially more effective choice than foam dressings. These dressings are available with a textile (P1) and a non-sticking 3D wound contact layer (P2) and are able to absorb MMP and bacteria.

METHOD
Eleven highly exuding wounds that had been open for more than six weeks and previously treated with silicon foams were included. The population consisted of 5 men and 6 woman with a mean age of 64 years. All patients were referred to our clinic by the community nurses. Data for their wound treatment with silicon foams was extrapolated from their records. A thorough assessment of the patient's history was performed as well as a detailed wound assessment based on the T.I.M.E principle. Dressing changes according to exudate level.

RESULTS
All patients reported a reduction in exudate (average 73%), odor and pain during the first week of their treatment. All wounds gradually reduced in size taking between 1,5 - 3 months to completely close. These fast results lead to an increase of quality of life for the patients. The dressing showed to be amazingly effective at debriding and didn't 'sag'. The frequency of changes reduced from 3 times a week to once a week. We saw a 71.1% reduction of cost compared to previous treatment.

DISCUSSION
Our evaluation showed that SuperCore dressings promoted wound healing in patients where previous therapy with silicon foams had failed, increased patient satisfaction, while being very cost-effective. The MPD dressings were able to absorb more viscous exudate and to support the cleaning of the wounds by soft debridement.

ESTIMATED COST OF DIFFERENT TREATMENTS (PRICES IN EURO)

	TRADITIONAL GAUZE**	SILICONE FOAMS	SUPERCORE DRESSINGS
COST PER DRESSING	4.00	9.50	3.25
FIXATION	3.00		3.00
NURSE COST PER CHANGE	15.00	15.00	15.00
TOTAL COST PER CHANGE	22.00	24.00	21.25
CHANGES PER WEEK	7	3	1
TOTAL WEEKLY COST	154.00	73.50	21.25

** 5 pieces of sterile gauze in each package

References

1. Sabine Eming, Hans Smola, Berenike Hartmann, Gebhart Malchau, Ronny Wegner,Thomas Krieg, Sigrun Smola-Hess. The inhibition of matrix metalloproteinase activity in chronic wounds by a polyacrylate superabsorber. www.elsevier.com/locate/biomaterials.

2. Orlow A, Gefen A.The fluid handling performance of the curea P1 multipurpose dressing against superabsorbent and foam dressing technologies. Int Wound J. 2022; 1-12. doi:10.1111/iwj.13774.





3. Junker JPE, Kamel RA, Caterson EJ, Eriksson E. Clinical impact upon wound healing and inflammation in moist, wet, and dry environments. Adv Wound Care. 2013;2:348-356. doi:10.1089/WOUND.2012.0412.

62 year old woman with uncontrolled diabetes, hypertension and a BMI of 34 suffering from insomnia and depression due to painful, highly exuding leg ulcers. Wound duration 6 weeks without any signs of improvement. The patients main concern was the fluid dripping down her leg limiting her ability to go out and live a normal life. Previously used dressings included a variety of different foams covered with a 2-layer compression therapy. This regime lasted about 6 hours before the fluid started to ooze and drip out of the 2-layer compression.



The main expressed concern of this patient was the heavy exudate. On the first examination she clearly expressed to us that she wanted to get rid of the wet dripping legs as the ulcer itself was not a priority to her. Therefore, a superabsorbent dressing SuperCore was chosen due to its unique properties. Instead of using compression bandages, a leg wrap with compression properties was used. The decision of using a wrap was to give the patient self-control. If the exudate comes through the wrap, the patient can easily remove the wrap and change wound dressing. Initially we planned to see the patient every day, but, already after the first day there was a dramatic decrease of leakage, so it was enough to change 3 times a week. The leg wrap was re-applied each time. The lady complied with the treatment, and she reported she could sleep through the night. Pain was reduced from 10 to 5 by the end of the first week. After the first two weeks, dressing changes were done once a week until the wound healed after 6 weeks.

55 year-old man with chronic venous insufficiency and hypertonia, referral from his practice nurse. He has a family restaurant where he works as a chef, standing in front of a hot stove all day. He first went to his practice nurse due to pain, at that time there was no ulcer. Once the ulcer appeared, she treated it with an Ibuprofen medicated foam together with compression, which did not have any effect on the pain, so she changed to silicone coated foam under the compression therapy. 6 weeks later when the nurse referred him to me there was a large wound.



The periwound area looks macerated and the wound is covered with sloughy fibrin. Initially I was not allowed to touch the wound, let alone clean it, due to the pain but eventually the patient let me rinse it gently. When I tried to wipe with a non-woven gauze he screamed in pain and asked to do it himself. Pain level according to VAS 10 in spite of daily opiods. Each time, the dressing was changed the wound was irrigated with a surfactant. Pain levels very slowly started to 7, 6 days later and at the end of the second week pain levels were 4 and the opiods were replaced by Paracetamol. Eventually no pain was reported. The wound took 7 weeks to heal.

66 year old man with a history of hypertension, peripheral arterial disease, obesity, arterial fibrillation and type II diabetes, developed a pressure ulcer on his heel after heart surgery. The pressure ulcer was painful and physically debilitating, affecting his rehabilitation.

The wound had been open for two months at the time he was referred to our wound clinic. Calcium alginate covered with gauze was used initially but due to the maceration, treatment was changed to silicon foams. Even though the wound dressing was changed on a daily basis maceration was still an issue and, together with stalled healing, was the reason he was referred to us. Zinc oxide and other barrier cremes had also been used on the peri wound area with no success as they were applied on wet skin.



The peri wound area looked macerated due to improper management of the moderate to high level of exudation. The wound bed is covered with a mix of yellow slough and healthy tissue. A treatment plan was established between our clinic, the ward staff, and the patient. The plan focused on improving his quality of life by rehabilitation, pain management, management of wound exudate, optimizing a healthy wound environment, and educating the staff on appropriate techniques for 24-hour pressure relief of the heel. The first three days, the dressing was changed daily and after the third day dressing changes were performed three times a week, gradually reducing to twice a week. As the amount of exudate was reduced, it was noted that P1 had to be moistened on removal as it stuck to the wound bed. Treatment was changed to the non-adherent P2, and no futher problem was noted. The wound closed in 13 weeks.