

Significant Cost Savings Realized by Changing Debridement Protocol

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Debriding all necrotic and nonviable tissue is the first step in wound bed preparation.¹ Hard, dry eschar is most frequently removed from a wound using sharp debridement. Soft eschar and slough can be removed enzymatically, mechanically, and by autolytic debridement. The enzyme collagenase ointment (Santyl, Healthpoint Biotherapeutics, Fort Worth, TX) has been the mainstay of our protocol for debridement. Recently, hypochlorous acid (Vashe Wound Solution, SteadMed Medical, LLC, Fort Worth, TX) has been reported to be effective at soft debridement when used as a wound soak followed by wiping of the wound.²

Because of the cost differential between the enzymatic debriding agent and the hypochlorous acid product, we conducted a trial comparing the use of the enzymatic debriding agent alone versus soaking the wound with hypochlorous acid before applying the enzyme. Results of wound healing, amount of enzyme required, and costs of the required enzymes were recorded in both patient groups, as well as the amounts and costs of hypochlorous acid required in the second group.

Methods

For the control group, patient and wound demographics were collected for 3 months on all wounds treated with our standard protocol for debridement, consisting of sharp debridement for all dry, hard eschar and/or daily application of the collagenase enzymatic debrider for soft eschar, debris, and slough. Once all necrotic and nonviable tissue had been removed, advanced wound dressings were used as indicated. In addition, the amount and daily costs of the enzymatic ointment were determined for each wound.

Following collection of the control data, a 3-month trial was conducted using a modification to our standard debridement protocol. Patient and wound demographics were recorded the same as during the control period, but once sharp debridement (if indicated) was completed, Vashe Wound Solution was applied to each wound; a soaked gauze was applied once a day and left in place for 10 minutes. The solution then was wiped off and the collagenase ointment applied to the wound the same as in the control group. Once all non-

Table 1. Institutional expenditures for agents used to facilitate debridement

	Control period	Trial period
Patients (N)	26	36
Wounds (N)	51	43
Expenditure for enzyme	\$39,544.16	\$14,410.16
Expenditure for Vashe	na	\$878.40
Cost Santyl per patient	\$1,521	\$400
Cost Santyl per wound	\$775	\$335
Cost Vashe per patient	na	\$24
Cost Vashe per wound	na	\$20
Total debridement cost per patient	\$1,521	\$424
Total debridement cost per wound	\$775	\$355

viable tissue was removed, advanced wound dressings were used as indicated. The amounts and costs of the Vashe and collagenase enzyme were recorded for all wounds in the trial group of patients along with subjective observations regarding healing.

Results

During the 3-month control period where Santyl alone was used for final debridement, 26 patients with a total of 51 wounds (34 pressure ulcers and the remainder including dehisced surgical incisions, traumatic wounds, burns, and leg ulcers) were treated. The cost of the Santyl for those patients treated only with the enzymatic debriding agent was \$1,521 per patient or \$775 per treated wound. During the 3-month trial period where Vashe was used before the Santyl application, 36 patients with 43 wounds (21 pressure ulcers and the remainder a mixture similar to the control group) were treated. The cost of Santyl for the patients where Vashe was used before the enzymatic debriding agent was \$400 per patient or \$335 per treated wound. The cost for the Vashe Wound Cleanser for the patients in the trial group was \$24

per patient or \$20 per treated wound. Adding the cost of the enzymatic debriding agent to the cost of the hypochlorous acid wound cleanser, debriding with the modified protocol cost \$424 per patient or \$355 per treated wound. Thus, the cost savings from modifying our protocol and adding hypochlorous acid before the enzymatic debriding agent was \$1,096 per patient or \$420 per treated wound. The cost to the institution for Santyl went from a high of \$16,085.76 per month during the control period to a high of \$6,702.40 per month during the trial period (see Table 1).

Although no objective wound image analyses were performed, it was our team's impression that wound healing did not decline with the debridement protocol modification and that the time to a clean wound bed was faster when Vashe Wound Solution was added to our standard Santyl ointment protocol.

Conclusion

Enzymatic debridement is a mainstay of the debridement protocol in our institution. The cost of the enzymatic debriding agent (Santyl) was a significant portion of the wound care costs. A trial was conducted to determine whether the costs associated with the enzymatic debriding agent could be lowered by modifying our debridement protocol by adding a preliminary soak with a hypochlorous acid-saturated gauze. Cost savings were found to be substantial — as much as almost \$10,000 per month. Based on this 6-month experience, it is clear that adding hypochlorous acid to our debridement protocol resulted in a noteworthy cost savings for wound care in our institution. ■

References

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2. Winkler M, Wisnieski L. Hypochlorous acid enabled soft debridement speeds healing of refractory venous leg ulcers – simplicity, low cost, and patient comfort are advantages. Poster presented at the Symposium on Advanced Wound Care. Dallas, TX. April 14–17, 2011.