

Evaluation of expedience of infected wound healing using a knitted viscose mesh impregnated with 100% Medical Grade Manuka honey versus a silver hydrogel sheet

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Problem statement

Bacterial infections are frequently observed in wounds with necrosis. The infection and necrosis delays wound healing. Silver, both ionic and nanocrystalline have been studied extensively for topical bacterial load elimination. Manuka honey has also been heralded as an antimicrobial agent. This study analyzes the expedience of infected wound healing utilizing a silver hydrogel sheet versus 100% Medical Grade Manuka honey.

Study overview and past treatment and execution

Ten residents/patients ages 57 to 84 were included in this study. All had infected pressure ulcers with osteomyelitis being ruled out prior to treatment. All were placed on antibiotic therapy prior to initiation of treatment secondary to positive aerobic and anaerobic cultures. All wounds were cleansed with sterile water prior to dressing. Sterile water, versus saline, was used as sodium can de-ionize a silver dressing thus rendering it ineffective in microbial management. Five of the residents used the silver hydrogel sheet being changed every three days and five used the Knitted viscose mesh impregnated with 100% Medical Grade Manuka honey, also being changed every three days. All were covered with a super absorbent cover dressing and all were followed for a period of twelve days. Granulation was measured in increments of 10%. All were free of necrosis secondary to surgical sharp debridement prior to initiation of moist wound healing. All had erythema and induration on the wound edges and all had malodorous drainage secondary to MRSA isolated in the wounds.

Findings

The wounds using the silver hydrogel sheet, after three days, showed 10% granulation in one of five wounds. On day six, two wounds showed 10% granulation. On day nine, two wounds showed 20% granulation and one showed 10% granulation. On day twelve, two wounds showed 20% granulation, two showed 10% granulation and one showed 0% granulation. Of the five wounds, two continued to show cardinal signs of infection including erythema and induration on the rims of the wounds on

Client	Method	Date	Granulation	Cardinal sign of infection +/-	Malodorous DGE +/-
1	Silver Hydrogel Sheet	Day 1	0%	+	+
		Day 3	0%	+	+
		Day 6	0%	+	+
		Day 9	0%	+	+
		Day 12	10%	+	+
2		Day 1	0%	+	+
		Day 3	10%	+	+
		Day 6	10%	+	+
		Day 9	20%	+	+
		Day 12	20%	+	+
3		Day 1	0%	+	+
		Day 2	0%	+	+
	Day 6	0%	+	+	
	Day 9	0%	+	+	
	Day 12	0%	-	+	
4	Day 1	0%	+	+	
	Day 3	0%	+	+	
	Day 6	10%	+	+	
	Day 9	20%	+	+	
	Day 12	20%	-	-	
5	Day 1	0%	+	+	
	Day 3	0%	+	+	
	Day 6	0%	+	+	
	Day 9	10%	+	+	
	Day 12	10%	-	-	

day twelve. Three of the five also continued to have malodorous drainage after twelve days. The wounds using the knitted viscose mesh impregnated with 100% Medical Grade Manuka honey showed the following: after three days, two wounds showed 10% granulation, after six days, five wounds showed 10% granulation, after nine days, three wounds showed 20% granulation, one wound showed 30% granulation and one wound showed 50% granulation. On day twelve, four wounds showed 60% granulation and one wound was 100% granulated. Of the five wounds, all five has resolved their induration and erythema and all were absent of malodorous drainage by day six.

Client	Method	Date	Granulation	Cardinal sign of infection +/-	Malodorous DGE +/-
6	100% Manuka honey	Day 1	0%	+	+
		Day 3	10%	+	+
		Day 6	10%	-	-
		Day 9	20%	-	-
		Day 12	60%	-	-
7		Day 1	0%	+	+
		Day 3	0%	+	+
		Day 6	10%	-	-
		Day 9	20%	-	-
		Day 12	60%	-	-
8		Day 1	0%	+	+
		Day 2	0%	+	+
	Day 6	10%	-	-	
	Day 9	50%	-	-	
	Day 12	100%	-	-	
9	Day 1	0%	+	+	
	Day 3	0%	+	+	
	Day 6	10%	-	-	
	Day 9	20%	-	-	
	Day 12	60%	-	-	
10	Day 1	0%	+	+	
	Day 3	10%	+	+	
	Day 6	10%	-	-	
	Day 9	30%	-	-	
	Day 12	60%	-	-	



Day 1



Day 12

Conclusion

The use of the knitted mesh impregnated with 100% Medical Grade Manuka honey dressing gave superior wound healing resolution of cardinal signs of infection and improvement in odor control.

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