

Evaluation of efficacy and cost savings in the debridement of diabetic ulcers with fibrin, utilizing a preservative and coloration free 100% Manuka honey versus a pharmaceutical chemical debrider

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Problem statement

Diabetic wounds present a problem in healing as they tend to develop a tough, spider web like substance in their bases called fibrin. A diabetic wound, in addition, must have total pressure relief in order to heal or fibrin will re-develop along with callous formation. This study examines the expedience of autolytic debridement utilizing a 100% preservative and coloration free Manuka honey as well as cost containment versus a pharmaceutical chemical debriding agent.

Study overview, past treatment and execution

Thirty clients were chosen ages 53 to 79, all with plantar diabetic ulcers with 100% fibrin in their bases. All had callousing debrided as needed prior to study initiation and all had toes pressures and/or invasive arterial studies done to establish arterial competence before debridement was considered. All thirty were infection free and had fairly stable blood sugars prior to study initiation. All wounds measured 2.8cm - 3.1cm in length and 2.4cm - 3.2cm in width.

Fifteen were enrolled in the autolytic 100% Manuka honey group and fifteen in to the chemical debrider group. All were cleansed with normal saline and pad dried prior to treatment. All were offloaded to prevent any pressure. They were followed for a period of twelve days with dressings being changed daily. Each group had the agent applied nickel thick and were covered with a bordered composite dressing. The cost of the debriding agent was \$176.50/30gm tube and the cost of the 100% Manuka was \$12.99/25gm tube. One tube was used for each resident/patient.



Pre 100% Manuka honey



After 100% Manuka honey applied

Findings

The percentage of remaining necrotic tissue and fibrin mix was measured in 10% increments daily. The results of the two groups are as follows:

100% Manuka honey group

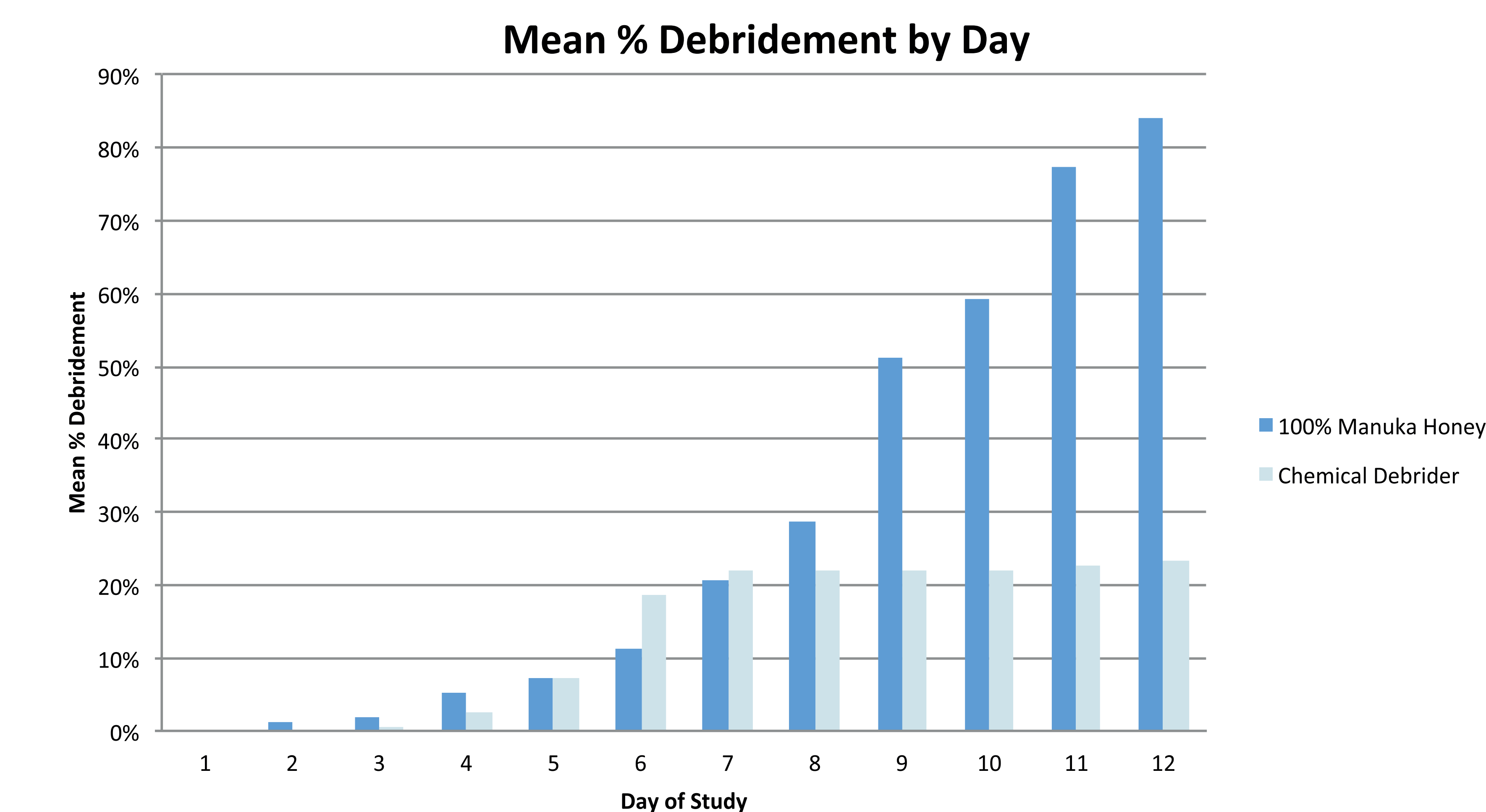
Day 1	15/100%					
Day 2	13/100%	2/90%				
Day 3	12/100%	3/90%				
Day 4	9/100%	4/90%	2/80%			
Day 5	6/100%	7/90%	2/80%			
Day 6	6/100%	4/90%	3/80%	1/70%	1/60%	
Day 7	2/100%	2/90%	7/80%	2/70%	1/60%	1/50%
Day 8	1/90%	6/80%	6/70%	1/50%	1/30%	
Day 9	5/60%	7/50%	1/40%	1/30%	1/10%	
Day 10	4/60%	4/50%	5/30%	2/10%		
Day 11	1/50%	1/40%	7/30%	4/10%	2/0%	
Day 12	1/50%	2/30%	5/20%	3/10%	4/0%	

no. of patients / % necrotic tissue remaining

Chemical Debrider Group

Day 1	15/100%					
Day 2	15/100%					
Day 3	14/100%	1/90%				
Day 4	12/100%	2/90%	1/80%			
Day 5	7/100%	6/90%	1/80%	1/70%		
Day 6	4/90%	9/80%	2/70%			
Day 7	3/90%	7/80%	4/70%	1/60%		
Day 8	3/90%	7/80%	4/70%	1/60%		
Day 9	3/90%	7/80%	4/70%	1/60%		
Day 10	3/90%	7/80%	4/70%	1/60%		
Day 11	3/90%	6/80%	5/70%	1/60%		
Day 12	2/90%	7/80%	5/70%	1/60%		

no. of patients / % necrotic tissue remaining



The rate of debridement varied considerably from the chemical debrider and the 100% Manuka Honey. Of the 15 patients receiving the 100% Manuka Honey dressing, all achieved a minimum of 50% debridement, 12 of the 15 patients achieved a minimum of 80% debridement and 4 of the patients achieved total debridement within the time period of the assessment.

The group receiving the chemical debrider achieved with 1 patient 40% debridement, 9 of the patients achieved 20% or less debridement, and the remaining 5 patients achieving 30% debridement within the same time period.

Total cost of chemical debriding agent: \$2647.50 (\$176.50/tube, 12 tubes, 12 patients)

Total cost of autolytic debriding agent: \$194.85 (\$12.99/tube, 12 tubes, 12 patients)

Conclusion

The autolytic debriding 100% Manuka honey outperformed the chemical debriding agent in the debridement of fibrin in diabetic wounds and presented a significant cost savings of \$2452.65.

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