

Evaluation of Expedience in the Debridement of Diabetic Ulcers with Fibrin Utilizing a Preservative and Coloration Free 100% Manuka Honey versus a Pharmaceutical Chemical Debrider, an 80% Manuka Honey with preservatives and Coloration and a 100% Manuka Honey with Color Additives

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Problem Statement

Diabetic wounds present a special 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 this material, 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 versus a pharmaceutical chemical debrider, an 80% Manuka honey with color and preservative additives and a 100% Manuka Honey with color additives.

Study overview, past treatment and execution

Sixty clients were followed ages 39 to 87, all with plantar diabetic ulcers with unstable draining eschar and/or fibrin covering 100% of the base. All wounds measured between 2.3cm to 3.9cm in length and 2.5cm to 3.6cm in width. All wounds had the calloused edges debrided prior to study leaving the eschar/fibrin combo in the base. All had toe pressures and/or invasive arterial studies to establish arterial competence before debridement and all were deemed infection free and had stable blood sugars prior to study initiation. All clients had their wound cleansed with normal saline and pat dried before treatment. All 60 had offloading attained prior to treatment. Fifteen clients were enrolled for each group. Each group had the selected agent applied nickel thick and was covered with a composite dressing. The group with the chemical agent had a small saline soaked 2 x 2 applied over the agent as per manufacturers' directions in addition to the cover dressing. They were followed for a period of twelve days with dressings being done daily.



Fig 1 - Before treatment



Fig 2 - After 4 weeks

Findings

The % of debridement was measured in 10% increments daily. The results of base covering per day per group are listed as follows:

80% Manuka group:

Day 1	15/100%										
Day 2	15/100%										
Day 3	15/100%										
Day 4	15/100%										
Day 5	14/100%	1/90%									
Day 6	13/100%	2/90%									
Day 7	11/100%	1/90%	3/80%								
Day 8	7/100%	0/90%	4/80%	3/70%	1/60%						
Day 9	6/100%	1/90%	3/80%	4/70%	1/60%						
Day 10	3/100%	2/90%	5/80%	3/70%	2/60%						
Day 11	3/100%	2/90%	5/80%	3/70%	2/60%						
Day 12	1/100%	4/90%	7/80%	1/70%	1/60%	1/50%					

Chemical debrider group:

Day 1	15/100%										
Day 2	15/100%										
Day 3	15/100%										
Day 4	14/100%	1/90%									
Day 5	9/100%	4/90%	2/80%								
Day 6	5/100%	6/90%	3/80%	1/70%							
Day 7	4/100%	4/90%	2/80%	5/70%							
Day 8	1/100%	3/90%	2/80%	9/70%							
Day 9	1/100%	2/90%	2/80%	9/70%	1/60%						
Day 10	0/100%	2/90%	1/80%	10/70%	2/60%						
Day 11	0/100%	1/90%	1/80%	9/70%	3/60%	1/50%					
Day 12	0/100%	0/90%	2/80%	9/70%	2/60%	2/50%					

100% Manuka group with color additives:

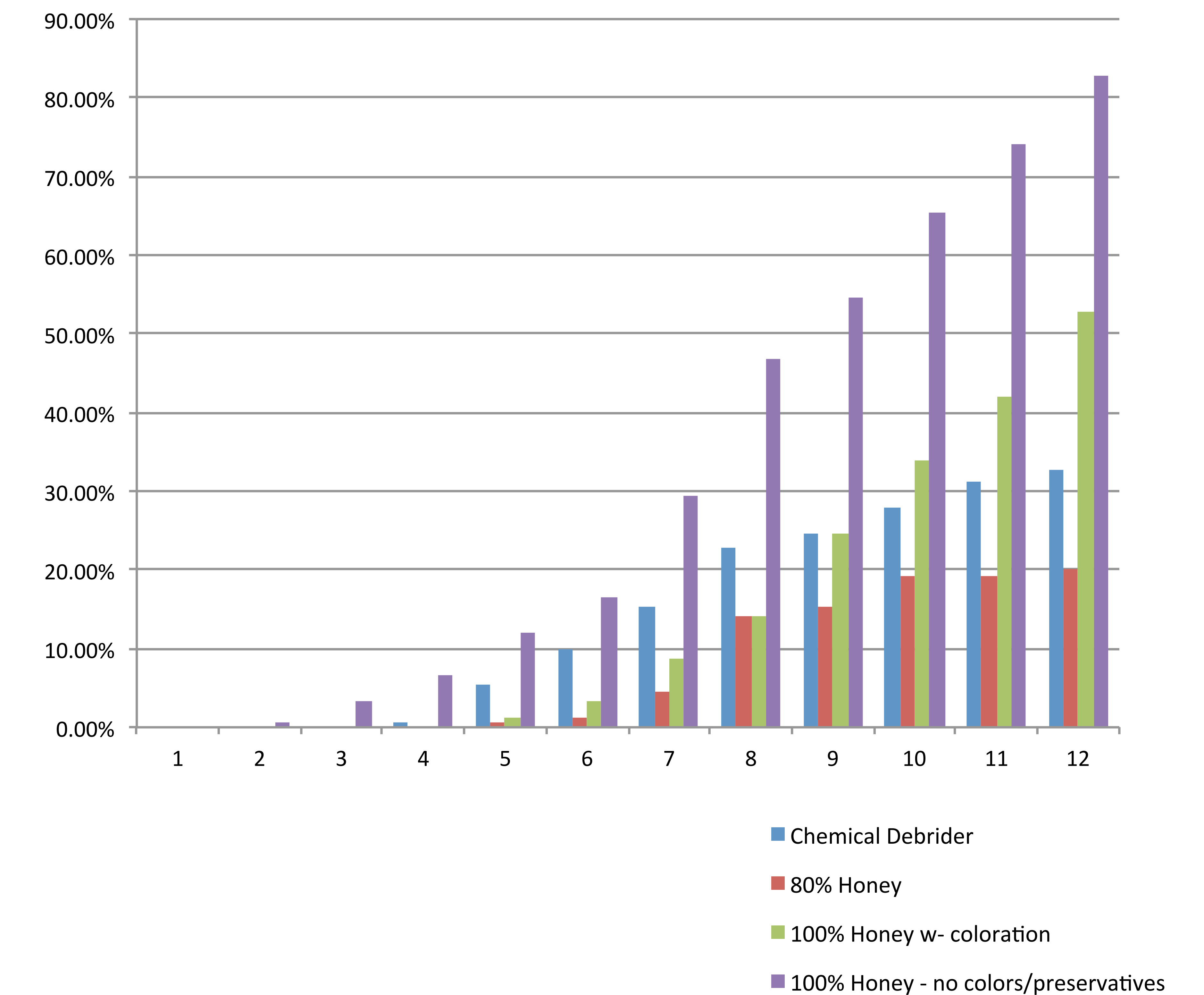
Day 1	15/100%										
Day 2	15/100%										
Day 3	15/100%										
Day 4	15/100%										
Day 5	13/100%	2/90%									
Day 6	12/100%	1/90%	2/80%								
Day 7	10/100%	0/90%	2/80%	3/70%							
Day 8	6/100%	4/90%	1/80%	1/70%	3/60%						
Day 9	3/100%	2/90%	1/80%	4/70%	4/60%	1/50%					
Day 10	0/100%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

100% Manuka group with no color additives or preservatives:

Day 1	15/100%										
Day 2	14/100%	1/90%									
Day 3	11/100%	3/90%	1/80%								
Day 4	8/100%	5/90%	1/80%	1/70%							
Day 5	6/100%	7/90%	0/80%	0/70%	0/60%	1/50%	1/40%				
Day 6	5/100%	5/90%	1/80%	1/70%	1/60%	1/50%	1/40%				
Day 7	2/100%	2/90%	1/80%	6/70%	0/60%	3/50%	0/40%	1/30%			
Day 8	0/100%	1/90%	1/80%	4/70%	0/60%	4/50%	3/40%	1/30%	1/20%		
Day 9	0/100%	0/90%	0/80%	0/70%	1/60%	9/50%	4/40%	0/30%	0/20%	1/10%	
Day 10	0/100%	0/90%	0/80%	0/70%	1/60%	3/50%	6/40%	1/30%	2/20%	0/10%	2/0%
Day 11	0/100%	0/90%	0/80%	0/70%	0/60%	2/50%	6/40%	1/30%	0/20%	2/10%	4/0%
Day 12	0/100%	0/90%	0/80%	0/70%	0/60%	0/50%	2/40%	3/30%	4/20%	1/10%	5/0%

Increased % of debridement achieved

Mean % of debridement by day



Conclusion

The 100% preservative and color additive free Manuka honey outperformed the other 80% and 100% honey as well as the chemical debriding agent in expedience of debridement of eschar and fibrin.

*Special thanks to Lafayette Manor for their participation in this study as well as Square One Medical for providing the 100% preservative/color free honey, Acticon (Advancis Medical) as well as the 80% Honey, Medihoney (DermaSciences) and the 100% coloration added honey, Therahoney (Medline). Also thank you to Diamond Pharmacy for providing the chemical agent Santyl (Healthpoint).