[EP290] The effect of new self-adherent antimicrobial wound dressing on biofilm in comparison with established silver dressing

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Aim: Biofilm eradication have been found as an important part of wound healing process. The newly developed self-adherent hyaluronan-octenidine (SA-HO) wound dressing was found to decrease biofilm formation in our last case studies. In the present study we compare the effect of SA-OH dressing with a silver carboxymethyl cellulose (AgC) dressing in prospective, randomized, controlled design.

Method: Twenty-four patients with crural ulcers participated in prospective randomized study. One-half of the wound of each subject was randomly covered by SA-HO dressing, the second half with silver based AgC dressing. Then whole wound was covered by several layers of dry sterile gauze. Both dressings were regularly changed 3 times per week. Wound diameter, and percentage of the wound covered by biofilm were recorded. Tissue samples for histology and silver detection were taken from six subjects before and 2nd and 6th week of the treatment. The presences of silver and histochemical signs of wound healing were assessed.

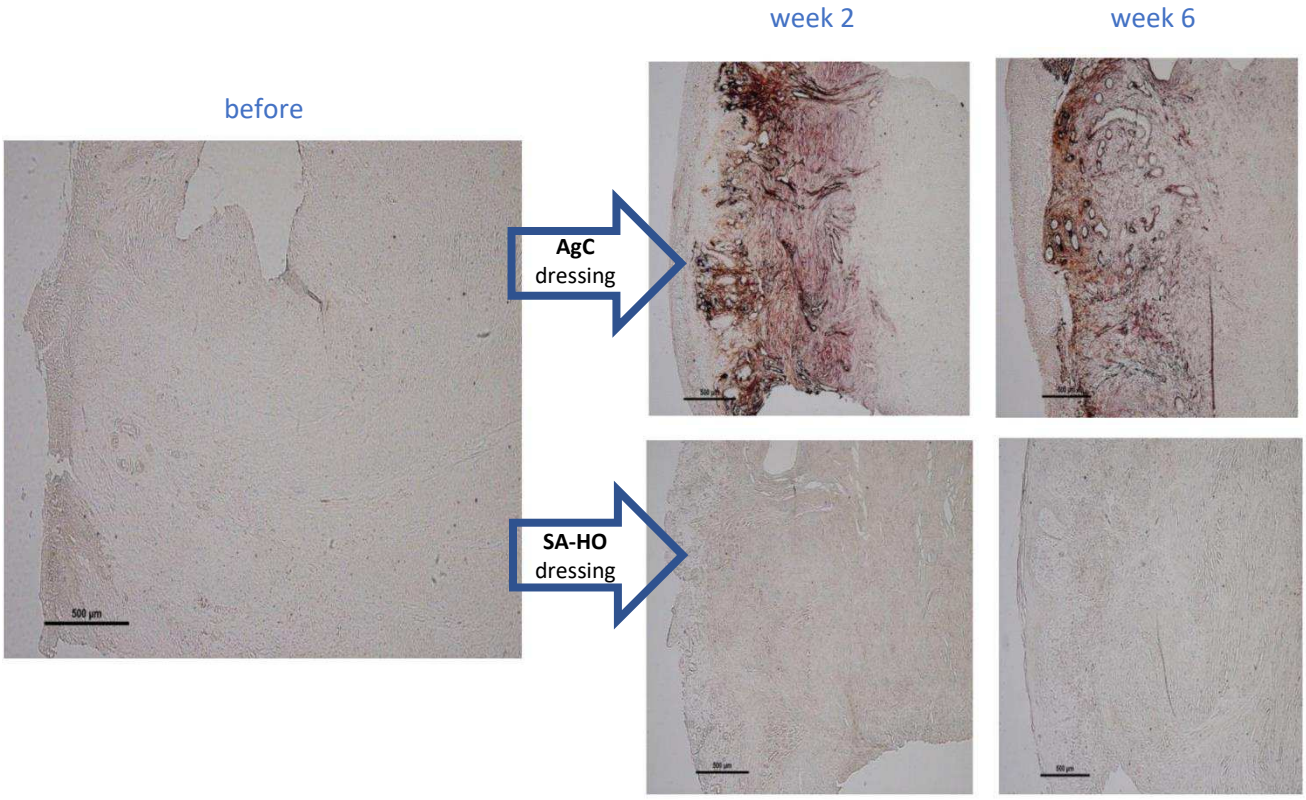
Results / Discussion:

Biofilm area was significantly smaller in wound parts covered by SA-HO dressing in comparison with parts covered by AgC. The area covered by biofilm (mean ± standard deviation) in week 2 and 6 was 64±30% and 27±18% in AgC parts and 21±12%, and 2.4±2.1% in SA-HO parts of the wounds, respectively.

	AgC dressing	Self-adhesive HO dressing	
	Silver	Hyaluronic acid, octenidine	
Before	74±24.3	75±23.4	
Week 2	62±24.5	16±12.5	$p < 0.05$
Week 6	24±16.3	2±2.4	$p < 0.01$

Table 1: Wound area covered by biofilm (%)

Histology discovered the silver deposits in AgC wound samples after two and six weeks. Histological indicators of healing in SA-HO group were already seen after two weeks. No side effects were recorded during the study.



Conclusion:

Regarding to the biofilm eradication the self-adherent hyaluronan-octenidine wound dressing was better than dressing based on silver. This study was supported by a program (PROGRES Q40/12 UK Czech Republic).