

**Supplementary Table 1.** Patient data.

<b>Patient</b>	<b>Age</b>	<b>Sex</b>	<b>Ulcer etiology</b>
1	61	M	Diabetic foot
2	58	M	Diabetic foot
3	73	F	Mixed arterial/venous
4	74	F	Diabetic foot
5	76	F	Mixed arterial/venous
6	66	F	Diabetic foot
7	70	M	Mixed arterial/venous
8	66	M	Diabetic foot
9	64	M	Venous
10	77	M	Diabetic foot
11	69	M	Mixed arterial/venous
12	72	M	From decubitus
13	63	F	Phlebostatic
14	67	M	From decubitus
15	78	M	Traumatic
16	71	M	Autoimmune
17	69	F	Traumatic
18	27	M	Phlebostatic
19	52	F	Infectious
20	64	F	Mixed arterial/venous
21	63	F	Diabetic foot
22	61	M	Diabetic foot
23	56	F	Arterial/ischemic
24	84	F	Neurotrophic
25	85	F	Neurotrophic
26	43	F	Post surgery
27	46	M	Post surgery
28	49	F	Phlebolympathic

29	63	M	From decubitus
30	88	M	From decubitus
31	49	F	From decubitus
32	37	F	Infectious
33	49	M	Traumatic
34	35	F	Traumatic
35	65	M	From decubitus
36	60	M	Cryoglobulinemia
37	52	F	Arterial
38	64	M	Deep vein thrombosis
39	38	M	Traumatic
40	88	F	Infectious

**Supplementary Table 2.** Patient data.

Arterial	1
Arterial/ischemic	1
Autoimmune	1
Cryoglobulinemia	1
From decubitus	6
Phlebolympathic	1
Phlebostatic	2
Infectious	3
Mixed arterial/venous	5
Neurotrophic	2
Diabetic foot	8
Post surgery	2
Traumatic	5
Deep vein thrombosis	1
Venous	1

**Supplementary Table 3.** WBP rating scale.

	<b>WBP Score</b>		
Characteristics of the wound bed	0 points	1 point	2 points
Healing edges	Absent	25-75%	>75%
Black Eschar (% wound area)	>25%	≤25%	Absent
Depth/granulation (relative to surrounding skin)	Severely depressed or elevated	Moderately depressed or elevated	Equalised or almost
Amount of exudate	Significant	Moderate	Mild or absent
Oedema	Severe	Moderate	Mild or absent
Perilesional dermatitis	Severe	Moderate	Mild or absent
Callused/fibrous edges	Severe	Moderate	Mild or absent
Pink wound bed	Necrosis/Fibrin	50-75%	>75%

**Supplementary Table 4.** Cutting & Harding rating scale.

<b>Cutting &amp; Harding (positive 2 or more)</b>
Abscess
Cellulite
Pus secretion
Formation of epithelial bridges
Friable tissues easy bleeding
Wound degeneration
Bad odor
Increased pain
Color alteration
Delayed healing
Formation of hepitelial bridges

**Supplementary Table 5.** Perilesional skin rating scale.

	<b>Absent</b>	<b>Scale from 1-10</b>	Rating scale from 1 to 10,  from mild to severe
Erythema			
Xerosis/Desquamation			
Maceration			
Inflammation			

**Supplementary Table 6.** Evolution of the lesion area. During the Run-in, the improvement was 4%, while during the treatment (T0-T42), the area reduction was, on average, 62%. In all cases observed, the improvement was significant, and in 37 cases out of 40 analyzed, the area reduction was more than 50%.

Run-in		Treatment			Follow up
T0	T14	T0	T14	T28	T42
35,8	34,5	34,5	22,6	16,9	13,1
% improvement					
	4%		34%	51%	<b>62%</b>

**Supplementary Table 7.** Pain assessment. In the Run-in period, the pain reduction was 9%, while in the treatment period, it was 43% at T14, 72% at T28, and 91% at T42. Note how here, too, the progression is linear.

Run-in		Treatment			Follow up
T0	T14	T0	T14	T28	T42
7,6	6,9	6,9	3,9	1,9	0,6
% improvement					
	9%		43%	72%	<b>91%</b>



**Supplementary Table 8.** WBP evolution. A noSupplementary Table difference was highlighted between the 14 days of Run-in, after which a 17% improvement was recorded. The treatment period ended with an overall improvement of 78% at T42.

Run-in		Treatment			Follow up
T0	T14	T0	T14	T28	T42
2,4	2,9	2,9	8,4	11,9	13,1
% improvement					
	17%		65%	76%	<b>78%</b>

**Supplementary Table 9.** Infection evolution. Infection during the Run-in period decreased by 7%.

During the treatment period, infections were eliminated in 32 out of 40 cases with a 49% improvement already at T14. At T42 the overall improvement was 93%.

Run-in		Treatment			Follow up
T0	T14	T0	T14	T28	T42
4,5	4,2	4,1	2,1	0,9	0,3
% improvement					
	7%		49%	78%	<b>93%</b>

**Supplementary Table 10.** Evolution of xerosis/desquamation of perilesional skin. The results obtained with the use of the product on Xerosis/Desquamation were evident. The Run-in period ended with a minimum improvement of 8% and then reached complete resolution at the end of the treatment at T42.

Run-in		Treatment			Follow up
T0	T14	T0	T14	T28	T42
7,7	7,1	7,1	2,6	0,8	0
% improvement					
	8%		63%	89%	<b>100%</b>

**Supplementary Table 11.** Evolution of perilesional skin maceration. The results obtained regarding Maceration show a 15% improvement at the end of the Run-in period, which then increased to 100% at T42 of the treatment with the medical device used.

Run-in		Treatment			Follow up
T0	T14	T0	T14	T28	T42
5,4	4,6	4,6	1,6	0,5	0
% improvement					
	15%		65%	89%	<b>100%</b>

**Supplementary Table 12.** Evolution of perilesional skin inflammation. Inflammation at the end of the Run-in period decreased by 16%. In the treatment period, the inflammation went from 63% at T14 to complete resolution with 100% at T42.

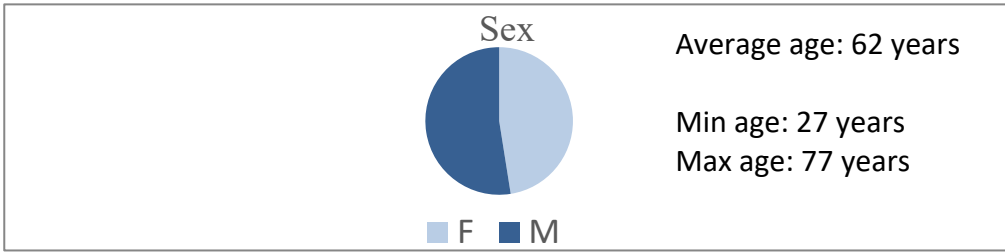
Run-in		Treatment			Follow up
T0	T14	T0	T14	T28	T42
4,9	4,1	4,1	1,5	0,4	0
% improvement					
	16%		63%	90%	<b>100%</b>

**Supplementary Table 13.** Bleeding evolution. The Bleeding parameter, understood as an increase in bleeding caused by the cleansing/debridement procedure, highlights that during the Run-in, the reduction was 9% compared to a 51% reduction at T14 of the treatment, which becomes 84% at T28 and 95% at T42.

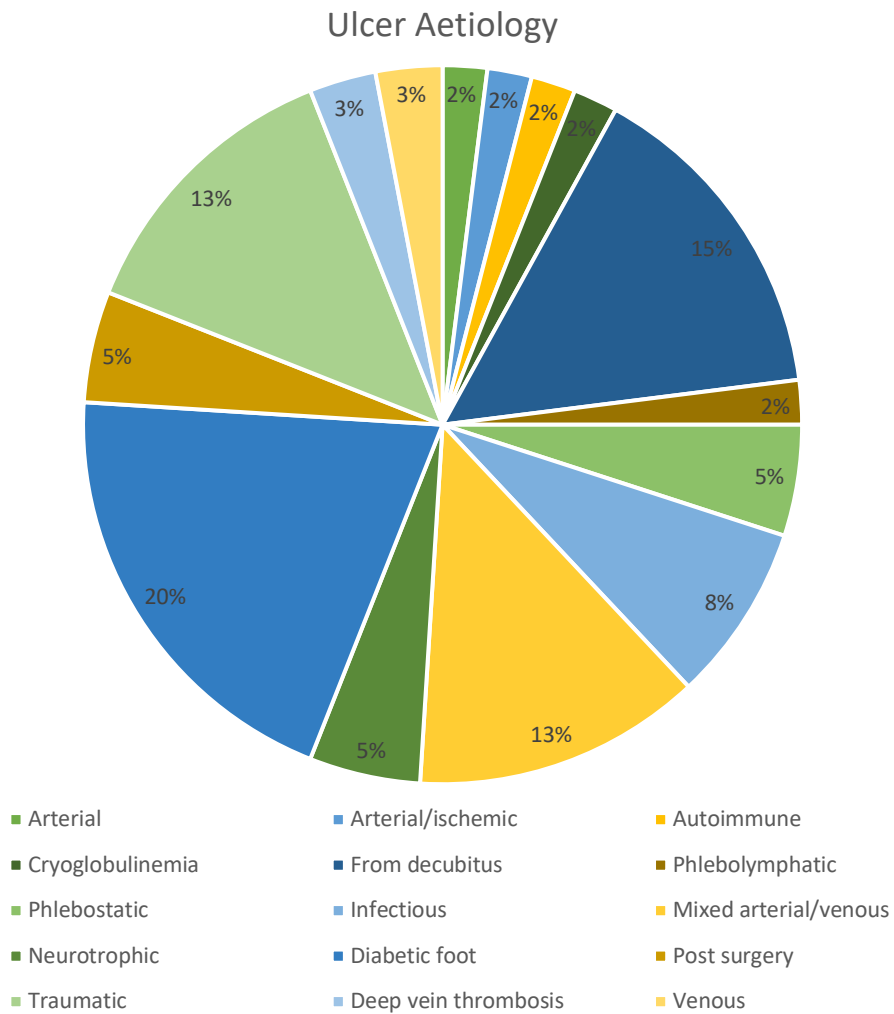
Run-in		Treatment			Follow up
T0	T14	T0	T14	T28	T42
6,9	6,3	4,3	2,1	0,7	0,2
% improvement					
	9%		51%	84%	<b>95%</b>

**Supplementary Table 14.** Evolution of procedural pain. The use of these systems allows the T phase of the TIMERS to be carried out adequately without "bothering" the patient too much. In fact, an 8% reduction in procedural pain was detected at T14 of the Run-in versus a 45% improvement at T14 of the treatment, which rose to 81% at T28 and 98% at T42.

Run-in		Treatment			Follow up
T0	T14	T0	T14	T28	T42
7,2	6,6	4,7	2,6	0,9	0,1
% improvement					
	8%		45%	81%	<b>98%</b>



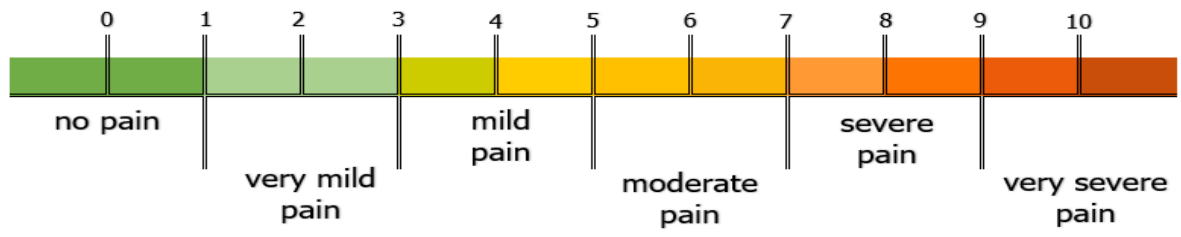
**Supplementary Figure 1. Sex and average age.**



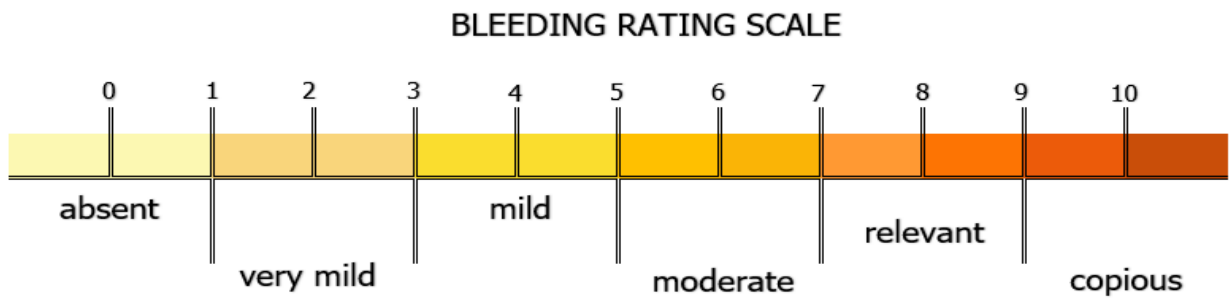
**Supplementary Figure 2. Ulcer etiology.**



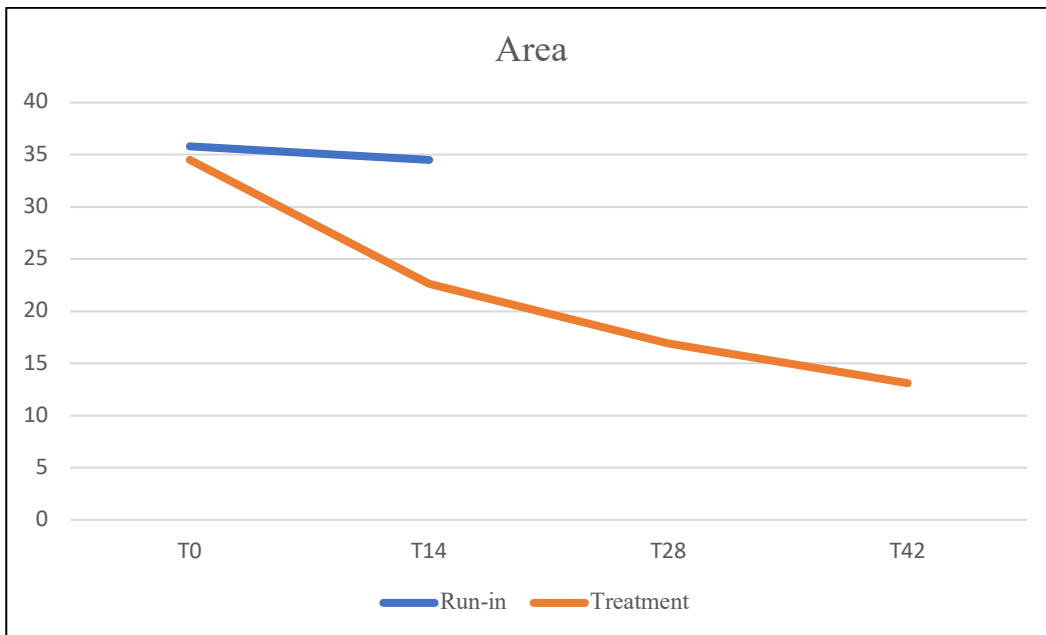
### VAS PAIN RATING SCALE



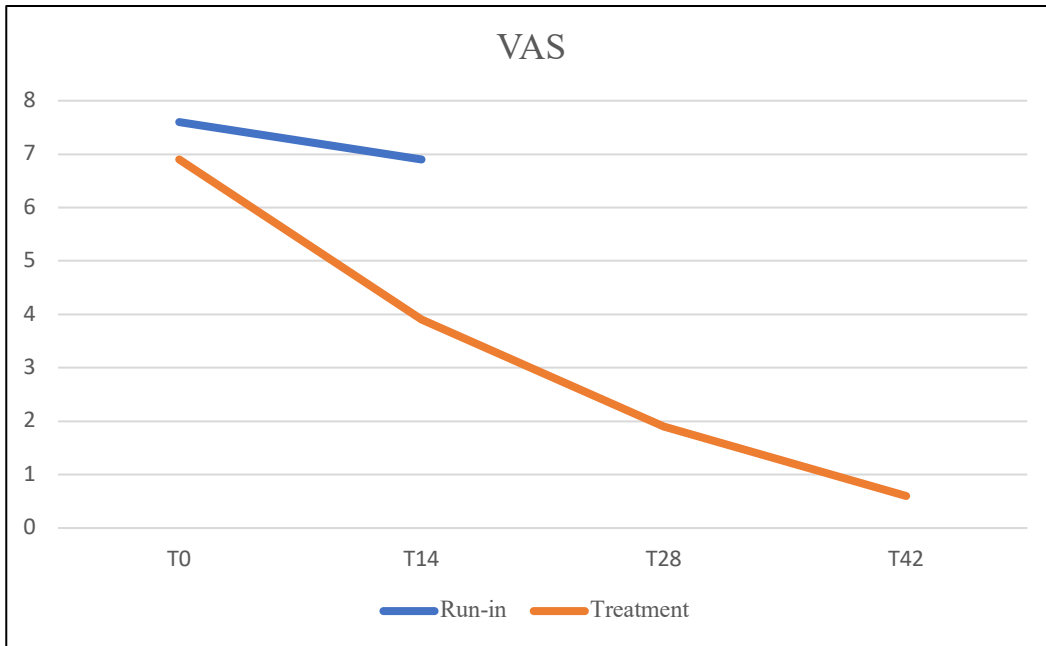
**Supplementary Figure 3.** VAS pain rating scale.



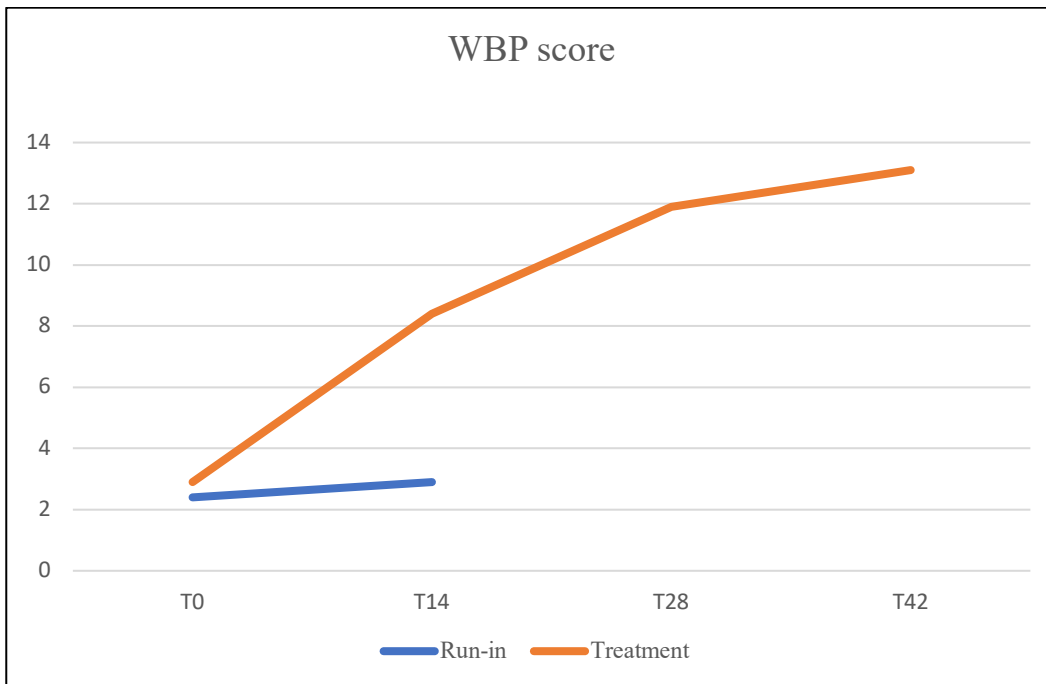
**Supplementary Figure 4.** Bleeding rating scale.



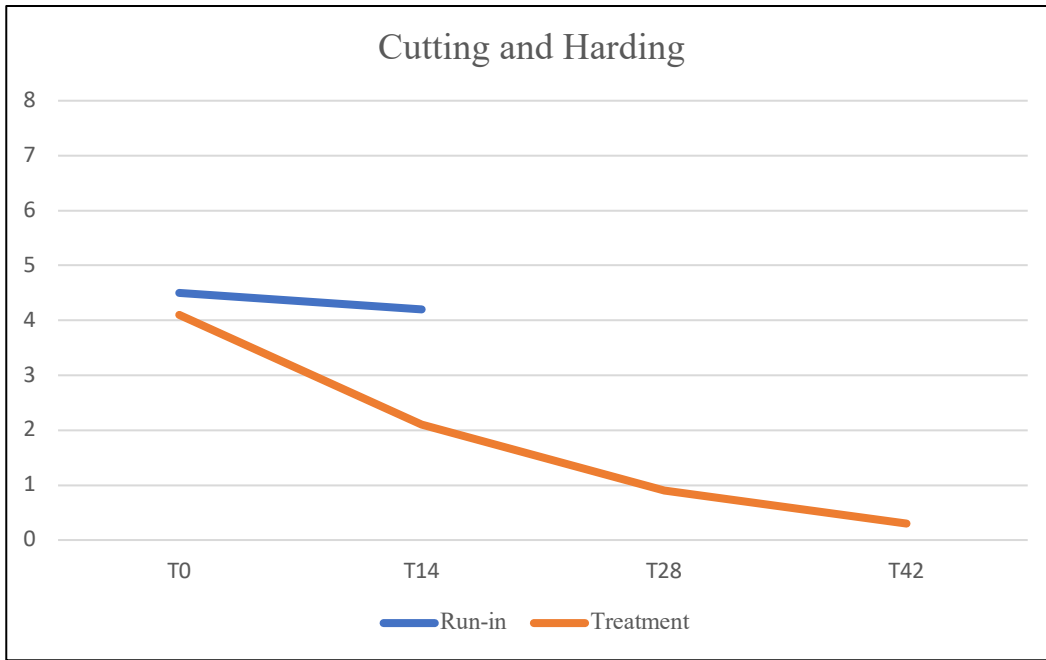
**Supplementary Figure 5.** Evolution of the lesion area.



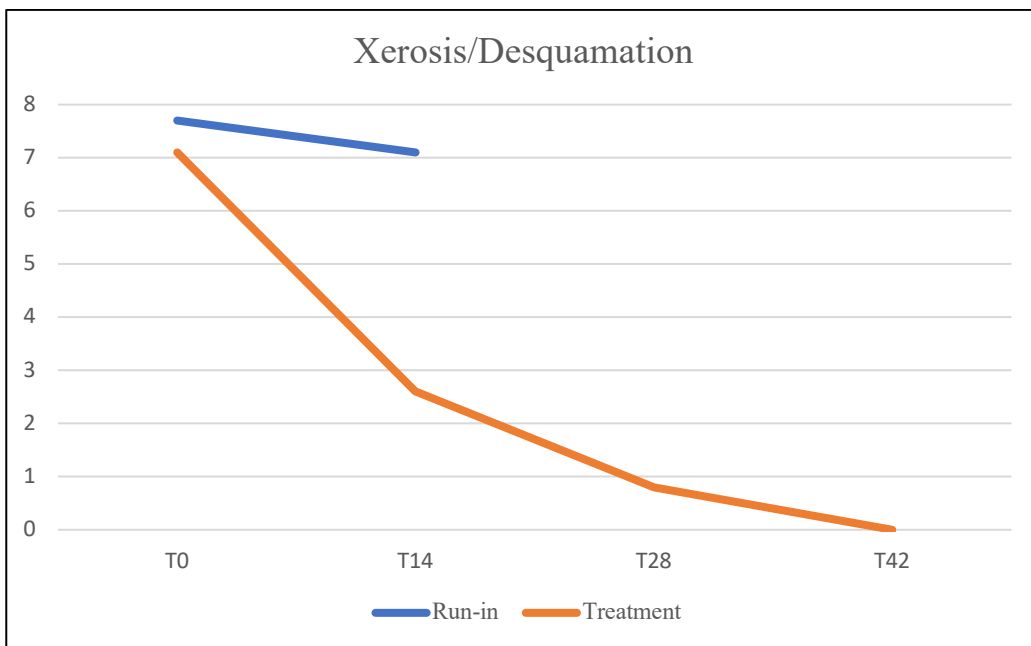
**Supplementary Figure 6. Pain assessment.**



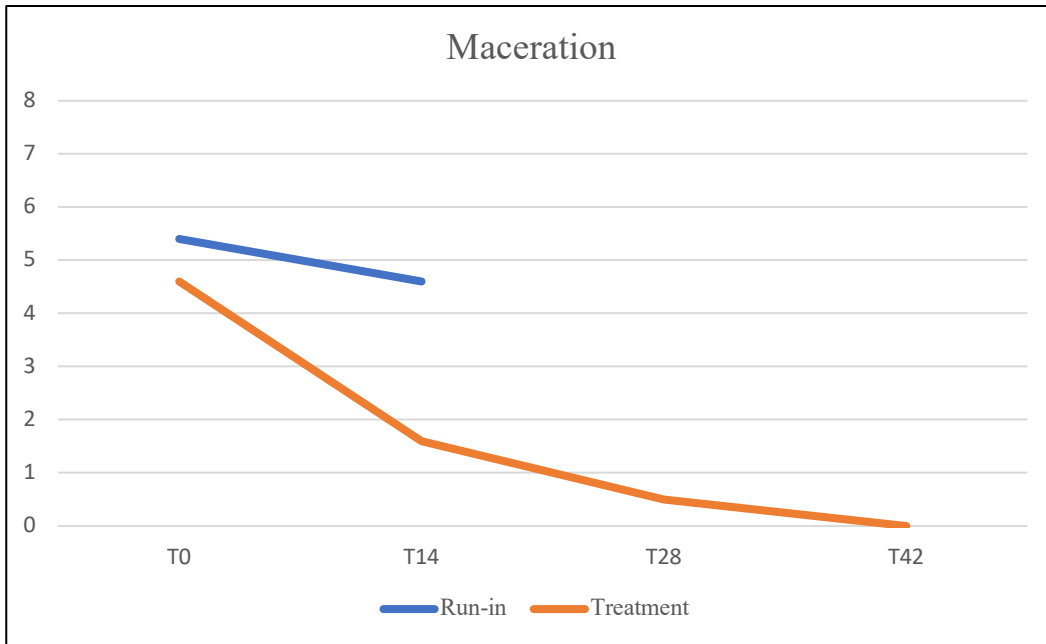
**Supplementary Figure 7. WBP evolution.**



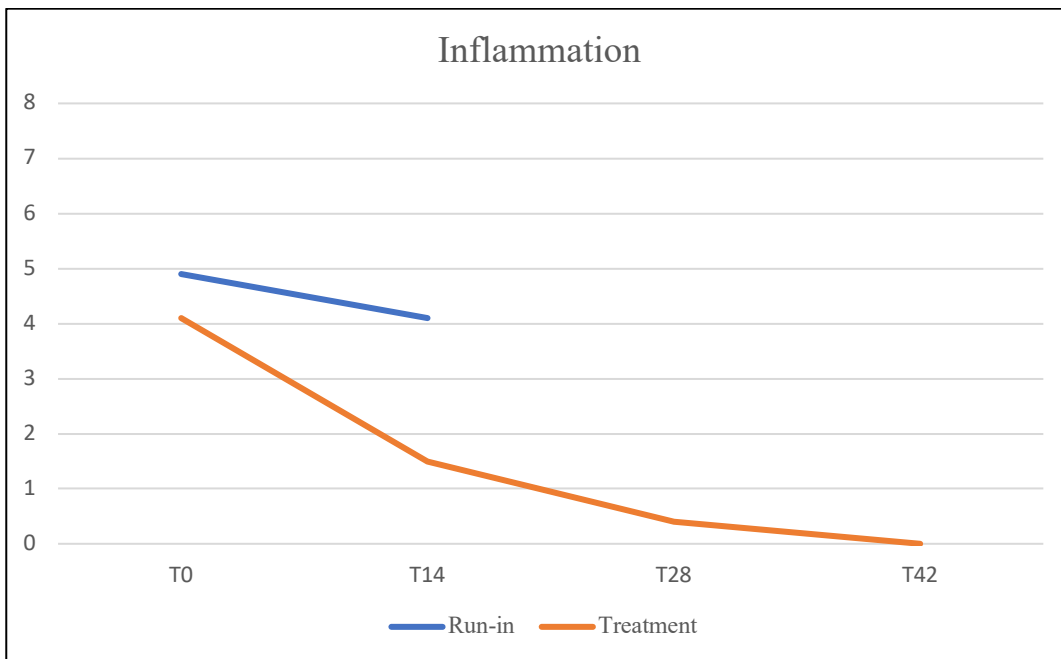
**Supplementary Figure 8.** Infection evolution.



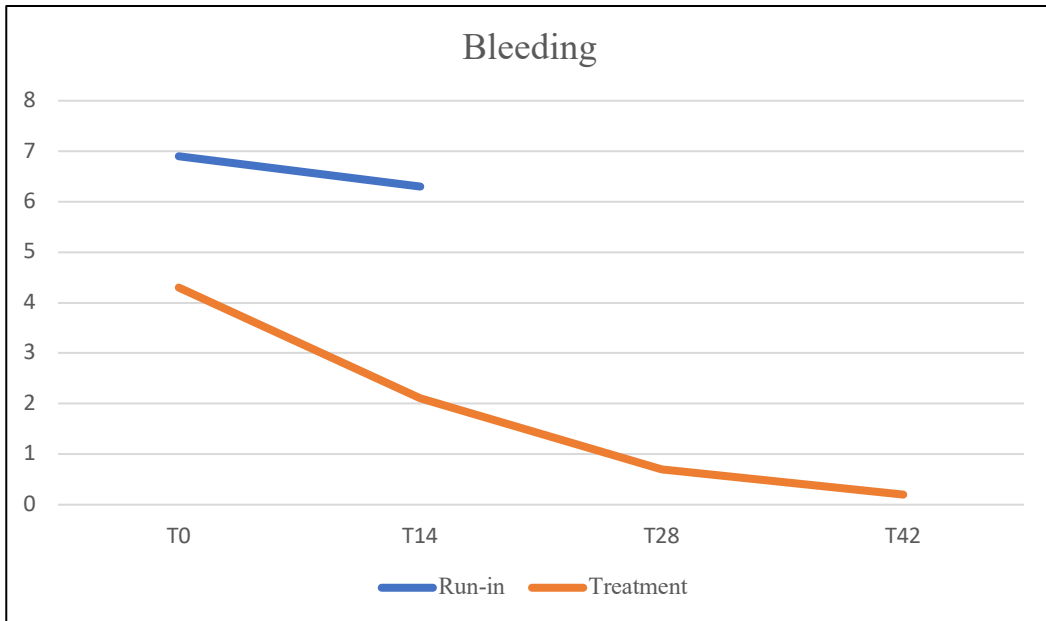
**Supplementary Figure 9.** Evolution of xerosis/desquamation of perilesional skin.



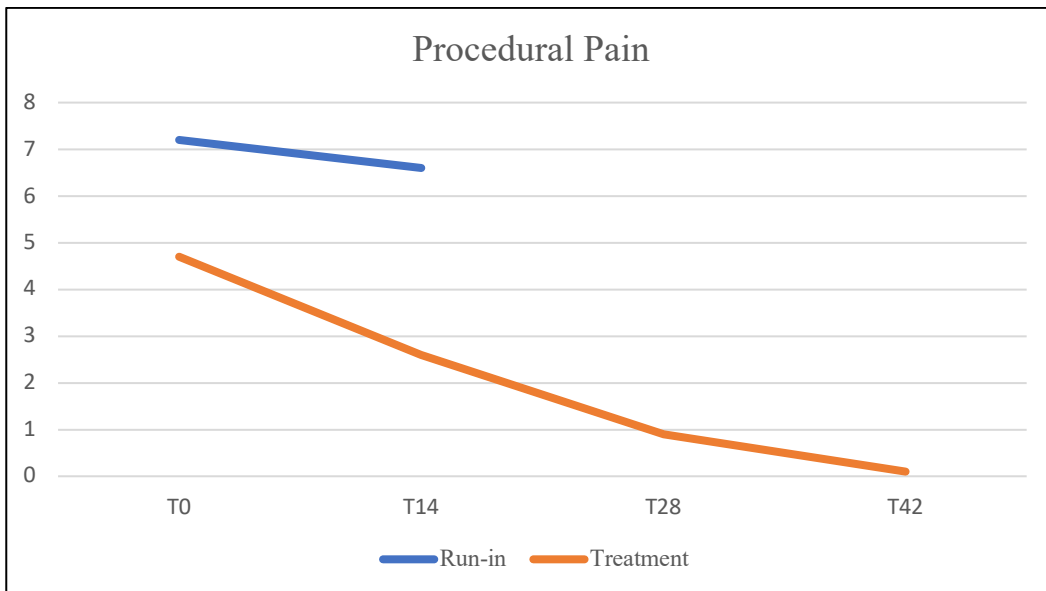
**Supplementary Figure 10.** Evolution of perilesional skin maceration.



**Supplementary Figure 11.** Evolution of perilesional skin inflammation.



**Supplementary Figure 12.** Bleeding evolution.



**Supplementary Figure 13.** Evolution of procedural pain.



**Supplementary Figure 14.** Patient n.3. Evolution of mixed arterial/venous ulcer with UCS® Debridement treatment.



**Supplementary Figure 15.** Patient n.5. Evolution of mixed arterial/venous ulcer with UCS® Debridement treatment.



**Supplementary Figure 16.** Patient n.7. Evolution of mixed arterial/venous ulcer with UCS® Debridement treatment.