

# Biocellulose wound dressing with PHMB\* in the management of cutaneous lesions treated with dermic substitutes

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## Introduction:

The use of bistratified dermic substitutes (silicone layer on a chondroitin sulfate scaffold)\*\*, in the reconstructive phase of cutaneous, various sourced losses of tissue sometimes involves the complete and/or partial separation of the external silicone layer. This required procedure not only alters the local wound conditions but can also cause an increased risk of infection. These effects considerably decreases an adequate surgical wound bed achievement for skin grafting (or spontaneous re-epithelisation) in the expected time.

## Aim

The aim of this observatory study was to find a mean that "protects" the dermic substitutes during the 3 weeks treatment needed for the repopulation of the acellular matrix. In detail the present work aims to minimize the risk of infection, manage the exudate state but also the hydratation of surgical wound bed and to a marked reduction in pain. Therefore we evaluate the positive effects and the effectiveness of the application of an advanced wound dressing, made up of biocellulose, water and polihexanide (PHMB) (0.3%)\*.

## Material and Methods:

The authors describe the experiences in the management of 15 patients with various cutaneous lesions (post traumatic, neoplastic, infective, congenital, inflammatory etiologies) in different anatomic regions (scalp, axillary, gluteus, upper and lower extremities). After an initial use of dermic substitutes with premature removal of the external layer, the hydrobalanced wound dressing\* was applied. In parallel the following parameters were recorded during the entire preparation of the wound bed: (i) bacterial contamination, quantitatively estimated with pads and number of colonies that increase in 48 hours on Petri dishes, respectively; carried out at the first observation (T0) and at every dressing change; (ii) amount of exudation, monitored by dressing changes every 3 to 7 days, depending on the size and the kind of skin lesion; (iii) degree of pain, estimated by an Visual Analogue Scale (VAS) ranging from 0 (absence of pain) to 10 (the maximum pain), recorded by the same doctor, before and after the first dressing application and each subsequent change; (iv) wound bed size and morphology, by means of periodic photographic controls and dimensioning using software (Rinoceros 3).

## Results:

During the critical 3 week period, in average 4 antimicrobial dressing changes (range of 2-6) per patient have been applied with the following results:

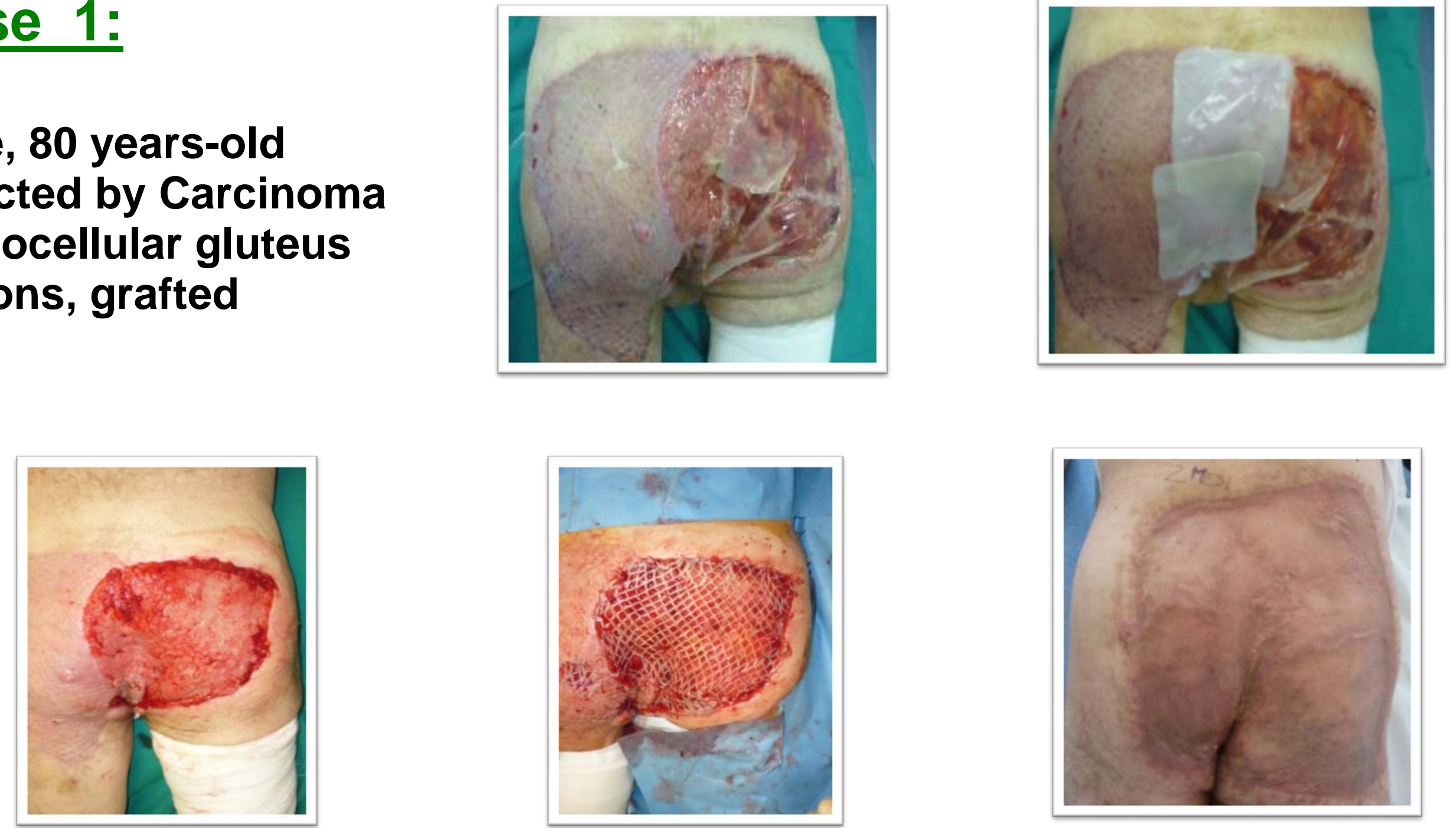
- 1) **Excellent tissue vitality / wound bed, absence of necrotic area and successful skin grafting in 95%-100% of cases** (Fig. 1);
- 2) **Control and/or reduction of bacterial contamination with 4 dressing changes (range of 2-6) without clinical signs of infection** (Fig. 1);
- 3) **Very good exudate management inside the biocellulose dressing's\* structure with contemporary maintenance of the humid atmosphere and gas exchanges;**
- 4) **Considerable reduction of pain after 4 dressings** (Fig. 3);
- 5) **Re-epithelisation: in 30% of the patients, a spontaneous healing of the more external areas was observed** (Fig. 1).

## Discussion and Conclusion:

According to the critical estimation of results, the Hydrobalanced biocellulose based wound dressing\* is a valid support capable of "saving and protecting" the dermic substitute's vitality (that was prematurely deprived of the external silicon layer) and ensures the realization of the surgical plan.

### Case 1:

Male, 80 years-old  
Affected by Carcinoma  
Spinocellular gluteus  
regions, grafted



### Case 2:

Male, 55 years-old,  
affected by hidrosadenitis  
right-left axillary regions,  
healed spontaneously after  
treatment



## TREATMENT RESULTS

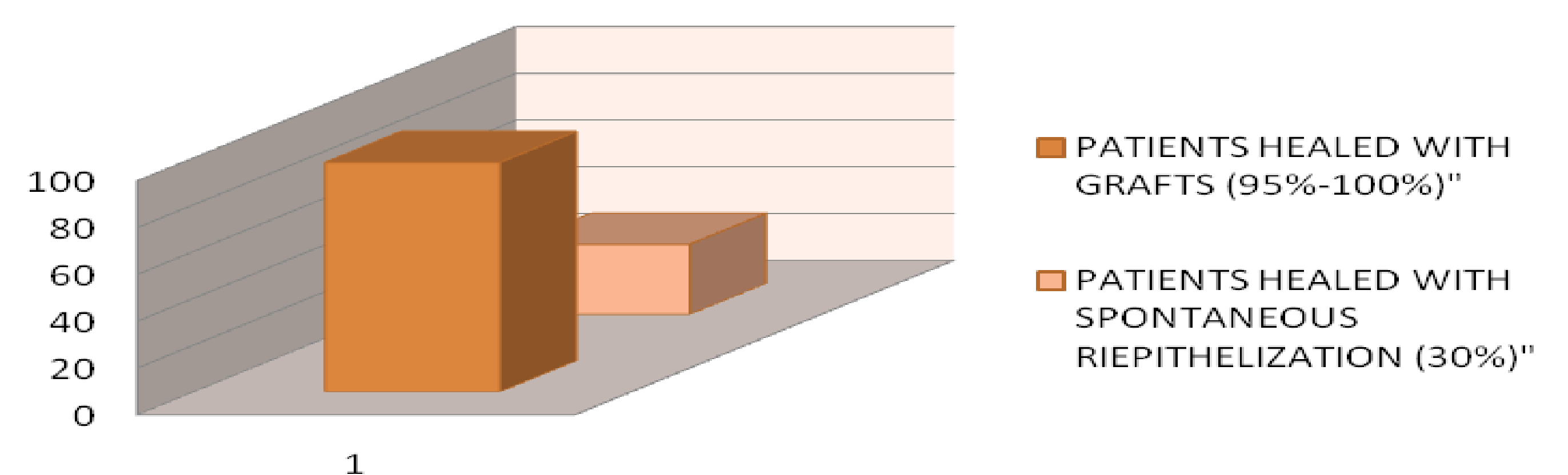


Fig. 1

## BACTERIAL CONTAMINATION

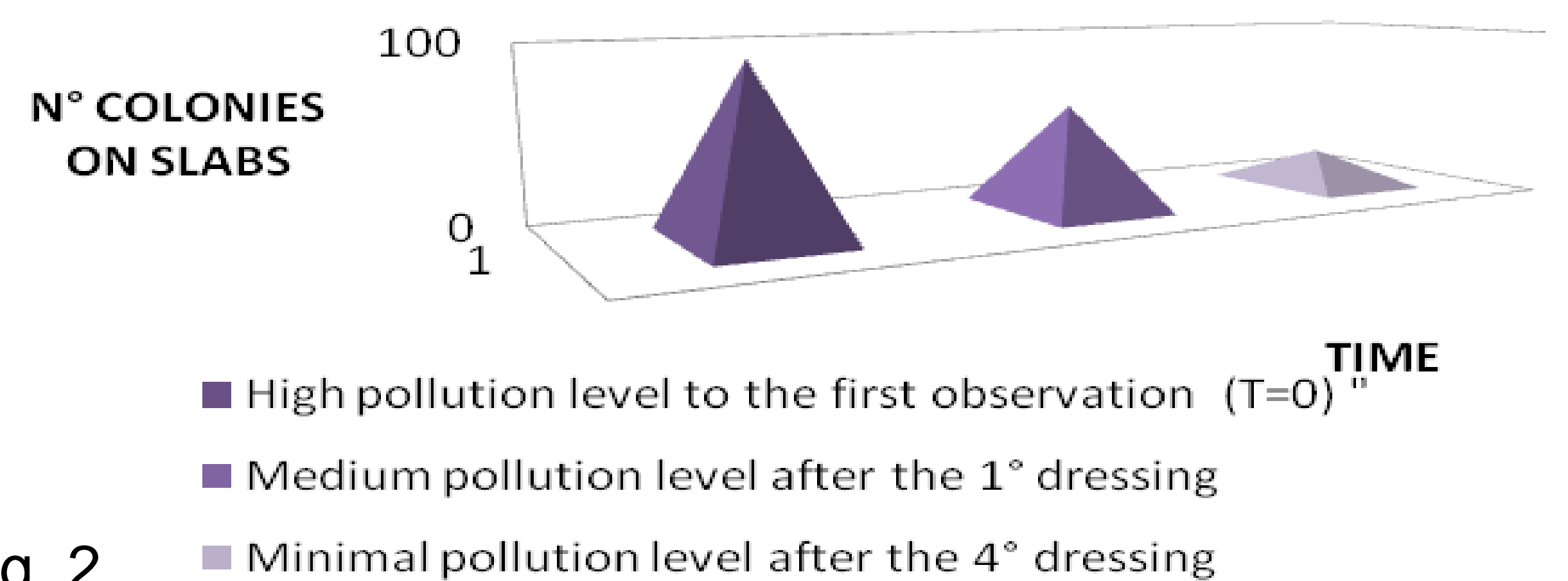


Fig. 2

## PAIN REDUCTION (VAS)

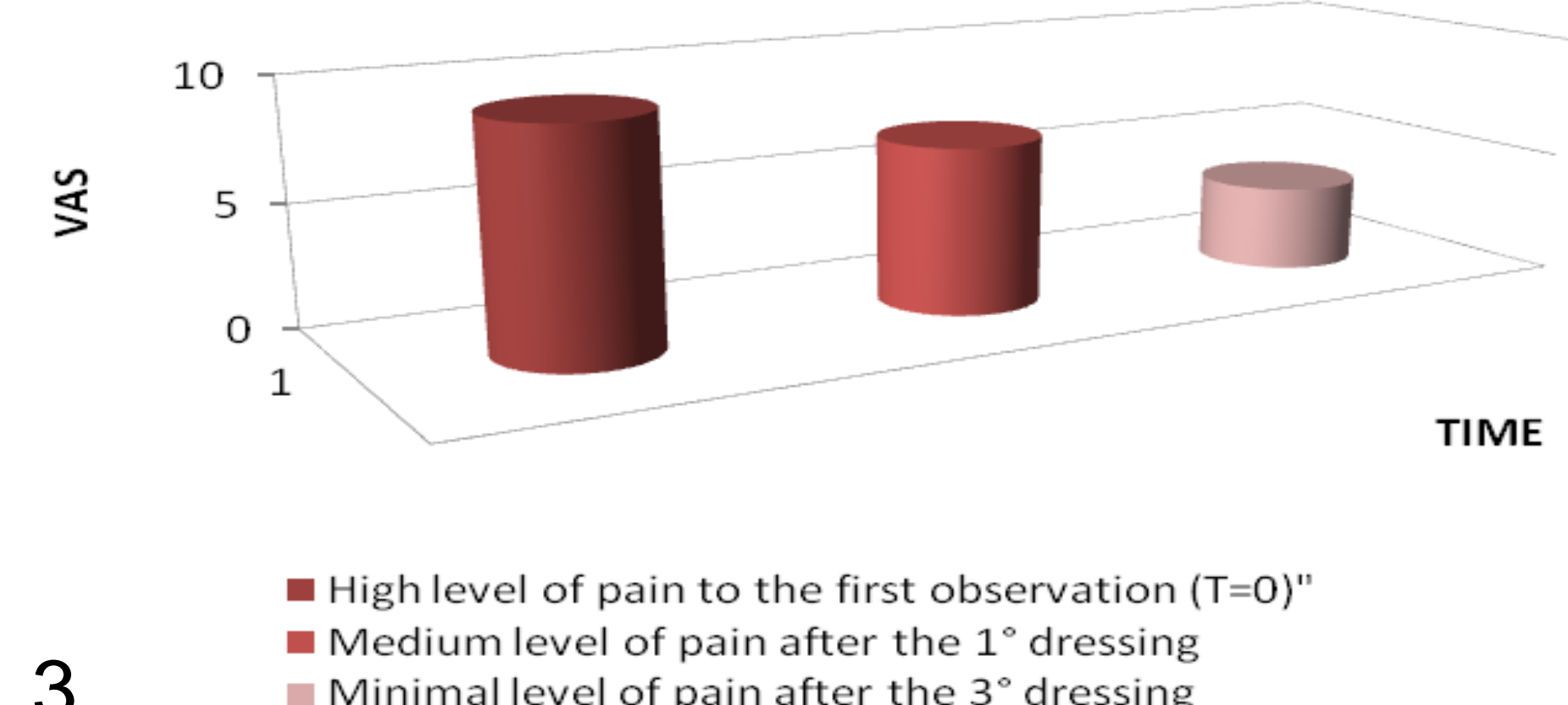


Fig. 3

\*Suprasorb® X+PHMB, Lohmann & Rauscher

\*\*Integra dermal regeneration template, Integra LifeSciences