# CONTROLLED NEGATIVE PRESSURE IN THE TREATMENT OF DIABETIC FOOT – CLINICAL EVALUATION OF A NEW DEVICE*

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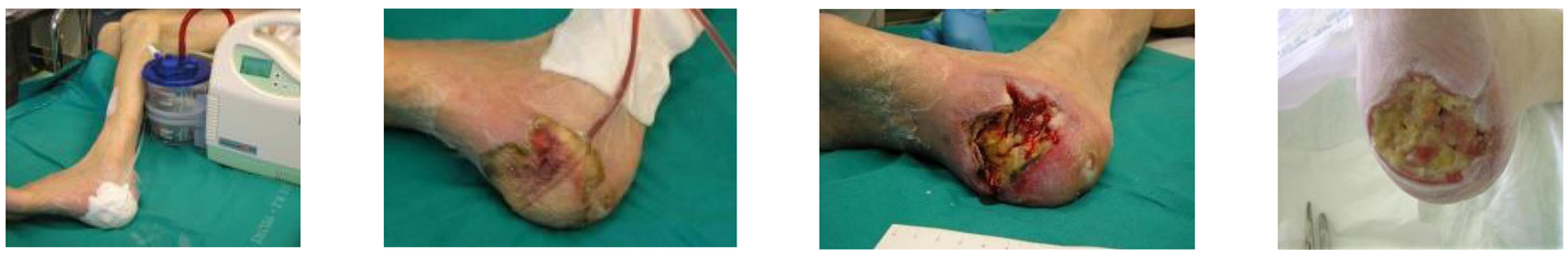
## Introduction:

Management of diabetic foot indicate in the surgical drainage and in antibiotic therapy the most important step of treatment to avoid septic complications. Adjunctiv therapy, topical negative pressure, was proposed to control exudate and bacterial growth.
Previous clinical experiences have shown the use of foam was not well accepted by patients cause of pain and by operators founded in complex dressing technique.
Therefore we evaluated a new topical negative pressure device* with gauze** to examine the different dressing techniques and technical devices.


## Materials and Methods:

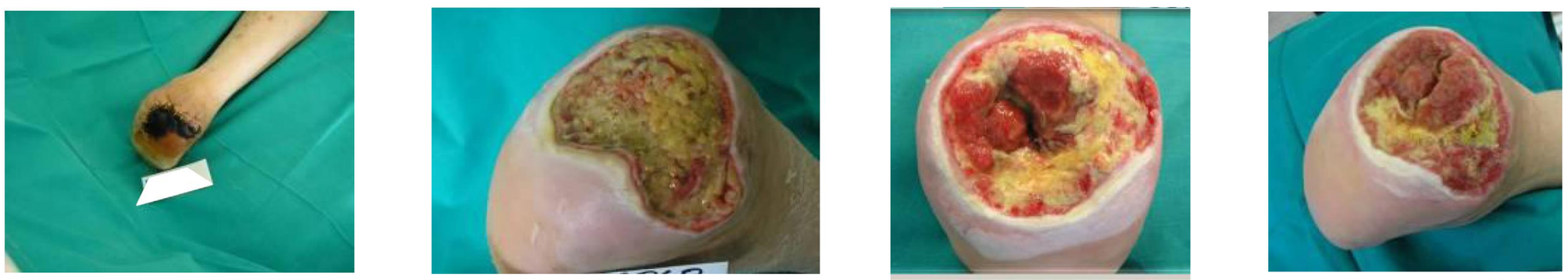
From April to September 2009 the centers selected 5 patients (4male, 1female, average age 60,4 years) affected by diabetic lesions with different exudation levels. The wound documentation was performed at the beginning, during and at the end of treatment. A biopsy was taken to choose the appropriate antibiotic(s). If necessary, we accomplished a surgical debridement. At the beginning, in every case a continuous negative pressure was applied. In 2 cases after 15 days the treatment was changed into an intermittend negative pressure.

Fig. 1: -Side of lesions-
Lateral side of the left foot. After surgical debridement it can be observed an initial granulation tissue around lesions



Case 1: 59 years old patient affected of hypertension and diabetes. In March 2009 left limb gangene and amputation. At the same time onset of necrosis on the contralateral foot. Antibiosis and prostacyclin were administred. In April 2009 CNP* was performed with continious negative pressure (-80 mmHg) for a week and dressing change twice a week. No pain was refered. In May 2009 CNP* was performed with intermittend mode (-60 mmHg 4 min. and -20 mmHg 2 min) for three weeks.

Fig. 2:
Removal of necrotic skin and the stages of tissue repair



Case 2: 58 years old man affected of diabetes; ischemic heart failure, alcoholoic hepatopathy. In February-March 2009 he was suffering of necrosis in the anterior part of the foot and then a Chopart-amputation was performed. After a surgical debridement, CNP* was performed initially with continious pressure (-80mmHg) for 10 days changing dressing evrey 4 days. Then, treatment was changed to intermittend pressure for next 8 days with dressing change twice a week.

## Results:

In all cases the infection could be handled (in combination with systemic anitibiosis) and the bacterial burden was reduced effectively. The handling of gauze** in topical negative pressure is excellent. Small up to large-sized ulcers can be treated easy for the operators and without pain for the patients.

## *Conclusion:*

**Application of topical negative pressure* with gauze** in diabetic foot seems to overcome the handling-difficulties and allows a minor operating pressure. It was also possible to use this device in large-sized ulcers in which mild or severe infection was present. It seems to be helpful in infection control that the gauze** is endowed with the antiseptic PHMB.**

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