

## Treatment of necrotizing fasciitis with combined longitudinal incision and NPWT in diabetic patients

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### Background

Necrotizing fasciitis (NF) is a rare but potentially fatal infection. Only early diagnosis and aggressive surgical treatment can reduce mortality and morbidity. It mostly occurs in immune-compromised individuals like diabetic patients who often have a history of a minor trauma or tissue loss of the foot. In these cases major amputation widely used as the only option for removing the septic source. But life expectancy of limb amputated diabetic patients are very poor, more than 50% of them will die in a 5-year period.

### Aim

In our clinical practice combining longitudinal incision and debridement with negative pressure wound therapy (NPWT) could improve limb salvaging ratio and life expectancy of diabetic patients.

From Sep 2014 To Jan 2018 we treated 15 diabetic patients with leg and / or shank NF - originated from a previous minor amputation wound or plantar ulcer leading to foot compartment syndrome. Major limb amputation as the only solution for life-saving has been offered to these patients previously. Our primary goal was limb AND life saving. Patient's age was  $54 \pm 8$  on average Female: male was 3:12.

### Method

Acute treatment was wide longitudinal incision of the leg (and the shank) - based upon which compartment of the foot has been involved - with removal of the necrotized fascia and subcutaneous tissues. Bone removal was limited only to fragmented or fractured particles. We intended to toe preservation avoiding late foot deformities.

We applied NPWT for  $6 \pm 3$  days. Systemic antibiotic therapy was continued 2 to 4 weeks. After NPWT removal we continued open wound management with hydrogels combined with silver containing foam dressing or hydro-responsive foam dressing. Compression therapy, nutritional supplement and half-, or full-foot offloading were also applied in every cases.

### Results

Average hospitalization was  $10 \pm 3$  days. 14 patients were without major amputation during the follow-up period. ( $12 \pm 6$  months). We lost 1 patient due to cardiopulmonary complications. In 2 cases we were forced to do a minor – toe – amputation due to gangrene. 12 of 15 patients regained full or limited working ability in  $40 \pm 16$  days. Wound healing period was  $160 \pm 146$  days.

### Discussion

Combination of longitudinal incision and NPWT could improve limb salvage ratio significantly in severe leg or crural NF. Hospitalization period was considerably lower than in the cases of the patients with major limb amputations. It also greatly reduced the retrieval time of patient's working ability and most importantly extended their life expectancy.