

# Multidisciplinary approach in the treatment patients with diabetic foot syndrome

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## KEYWORDS

critical lower limb ischemia, diabetic foot syndrome, minimally invasive surgery, multidisciplinary approach

## ABSTRACT

**Objective** Evaluate the effectiveness of the multidisciplinary specialists team in Almazov National Medical Research Centre to the treatment of patients with the neuroischemic form of diabetic foot syndrome in a multi-field hospital.

**Materials and methods** We made retrospective analysis of the multidisciplinary approach to the treatment of patients with a neuroischemic form of diabetic foot syndrome who were hospitalized to Almazov National Medical Research Centre during the period from January 2018 to July 2020 (inclusively). The patients were treated in the clinic of the Almazov National Medical Research Centre during one hospitalization period. The investigation includes patients over 18 years old with a diabetes mellitus who were performed revascularization at the vascular surgery clinic Almazov National Medical Research Centre. Patients with a secondary diabetes mellitus, immunosuppressive therapy were excluded from the study. 51 patients with neuroischemic form of diabetic foot syndrome were specifically selected for analysis. We gathered all information about them till August 2022. So, the period of observation was from 2 years 8 months (32 months) to 4 years 8 months (56 months). The mediana time was 44 months (3.67 years). All inclusive patients had a diabetic ulcer on the foot. The outcomes of this study were the healing or non-healing of diabetic foot ulcers, major amputation or death (from all causes).

**Results** Successful healing of ulcers or postoperative wounds at the time of contact with the patient or his relatives, was with 45 patients (88.3 %). In more than half of the patients (56.86 %) healing of ulcers and wounds was occurred in the 3 months after operation. 70.59 % (n = 36) patients were performed orthopedic organ-preserving reconstructions on the feet in the hospital. 6 patients (11.7 %) were performed initially revascularization according to the "less affected pathway" principle which didn't heal the ulcers in the postoperative period and led to repeated surgery to restore blood flow according to the angiosomal principle. For 9 patients (17.64 %) it was required to perform repeated orthopedic intervention on the foot during the current hospitalization. The causes of complications were: stent thrombosis (n=3), intimal dissections (n = 2) and distal embolism (n = 1). The reasons for repeated orthopedic surgery were marginal necrosis in the postoperative wounds. Optimal revascularization wasn't achieved with 10 (19.6 %) patients. Despite this in 4 (7.84 %) cases ulcers was healed. In two cases, 3.92 % (n = 2) suboptimal revascularization was associated with the lack of technical possibility in revascularization of the lower leg arteries with satisfactory revascularization of the femoral-popliteal segment. Indirect revascularization with no effect was performed in 4 cases (7.84 %). 6 major amputations (11.7 %) were performed during the observation period, 1 major amputation during the current hospitalization and 5 in the long-term period. The Kaplan-Mayer three-year survival rate was 80 %.

**Conclusion** The analysis of the results of a multidisciplinary approach to the treatment of patients with diabetic foot syndrome demonstrated an improvement in the preservation of the limbs, reduced of bone-plastic reconstructions, reduction of hospitalization time and improving the lives of patients.