

fistula failure for a period of three months of follow up. Further analysis are needed for the assessment of long term AVF functional capacity in both groups of patients

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**NO DIFFERENCE OF ARTERIOVENOUS FISTULA SUCCESSFUL CREATION AND MATURATION BETWEEN DIABETIC AND NON-DIABETIC PATIENTS AFTER THREE MONTHS OF SURGERY: THE BENEFICIAL ROLE OF PREOPERATIVE DOPPLER ULTRASOUND**

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**INTRODUCTION:** The arteriovenous fistula (AVF) has become a symbol of hemodialysis (HD) which guarantees the successful treatment and allows a multi-decade survival of patients. However the AVF creation and maturation is still a significant medical challenge especially in diabetic patients (DP). Due to the peripheral diabetic vasculopathy the rate of fistula failure of DP is still higher than the non-diabetic patients (NDP). The aim of the study was to compare the outcomes of DP and NDP with chronic kidney disease (CKD) stage 5 undergoing creation of a new upper limb AVF using a preoperative vessels mapping by Doppler ultrasound.

**METHODS:** Medical records for creation of AVF in the patients with CKD stage 5 for year 2018 were analyzed in a single center. Preoperative Doppler ultrasound for assessing the adequacy of blood vessels and to determine the location of AVF creation, were performed in all patients, a vein diameter > 2 mm and an artery diameter ≥ 1.6 mm are considered adequate. Three different types of AVF were created: the distal (radial-cephalic), middle-arm (radial-cephalic) and proximal (brachial-cephalic). Primary thrombosis of AVF was defined as an immediate failure of fistula within 24 hours of creation and primary failure was defined as thrombosis of fistula within 3 months. The demographic variables, location of the AVF creation, and HD time were included as parameters for determination of the successful maturation of AVF.

**RESULTS:** We analyzed 367 created AVF in 238 men (64,85%) and 129 female (35,15%). The average age of patients was 61.4 ± 14.2 years and mean HD vintage was 14 months. Successful AVF was created in 301 patients (82%) while primary thrombosis occurred in 66 patients (18%) of created fistulas. AVF maturation within 3 months was successful in 272 patients (74,15%), while the primary failure occurred in 95 patients (25,85%) of created fistulas. The distal AVF was dominant location in 168 (47,78%), followed by middle-arm location in 136 (37,06%) and proximal in 63 (17,16%) of created fistulas. AVF was created in 104 (28,3%) DP and 263 (71,7%) NDP. The DP were significantly older than NDP (64,12 vs. 60,40 years, p=0.000), and with shorter HD vintage in DP compared to NDP (7,06 vs. 16,49 months, p=0.004). There was no association between successful AVF creation and diabetes mellitus (OR=1,0, 95%CI 0,91-1,08, p=0,010). The AVF maturation was also not associated with diabetes mellitus (OR=1,0, 95%CI 0,93-1,14, p=0,413).

**CONCLUSIONS:** Using a preoperative Doppler ultrasound in the creation and maturation of AVF in DP are comparable with NDP regarding primary thrombosis and