

**Peripheral arterial disease in diabetic patients who need a new treatment after first endovascular approach: differences between patients on dialysis and not.**

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**Introduction:** Diabetes is a strong risk factor for peripheral arterial disease (PAD) and PAD has been reported in a rate of 50% in diabetic patients with foot lesion. End Stage Renal Disease (ESRD) under dialysis treatment is an independent risk factor for PAD and in diabetic patients increases the risk of ulceration, non healing ulcers and major amputation of lower limbs. Several studies suggest that angioplasty is a useful approach to treat Critical Limb Ischemia (CLI) also in those patients. Nevertheless, in some cases, ESRD diabetic patients require more percutaneous transluminal angioplasty (PTA) after first treatment. The aim of our study is to evaluate the differences in terms of arterial disease pattern between diabetic patients with and without dialysis before the first PTA and the arterial pattern before the re-PTA expressed as recurrence disease (RD), untreated disease (UD) or worsening disease (WD). **Materials and methods:** From a cohort of 456 diabetic patients who performed PTA because of CLI complicated by foot lesion, we have identified two groups according to dialysis treatment (D+) (n=60) or not (D-) (n=396). We selected patients who underwent a re-PTA. We have reported the arterial disease pattern before the first PTA expressed as: Above The Knee (ATK), Below The Knee (BTK) and Above and Below the Knee (ABK) disease. We have also analysed the arterial pattern observed at the new PTA expressed as: RD (restenosis of treated vessel), UD (PTA of vessel already affected but not treated at first time), WD (PTA of vessels not affected at first evaluation). **Results:** Patients D+ required more re-PTA than D- (30% vs 16%  $p<0.0426$ ) and had technical failure after re-PTA in a higher percentage (36.6 vs 5.13%  $p<0.01$ ). The affected vessels at first evaluation for D+ and D- were respectively: ATK (7 vs 16%), BTK (30 vs 22%) and ABK (61 vs 60%)  $\chi^2=0.57$ . Arterial pattern before re-PTA for D+ and D- were respectively: RD(60 vs 50%), UD(20 vs 21%) and WD(20 vs 28%)  $\chi^2=0.14$ . **Discussion:** Our data show that PTA failure is higher in diabetic patients under dialysis compared to them without. Re-PTA has a higher failure in D+. The worse outcome of PTA in D+ may be related neither to the pattern of the affected vessels nor to recurrence or worsening of vascular diseases.