60 months native vascular access follow up in a single centre

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OBJECTIVES

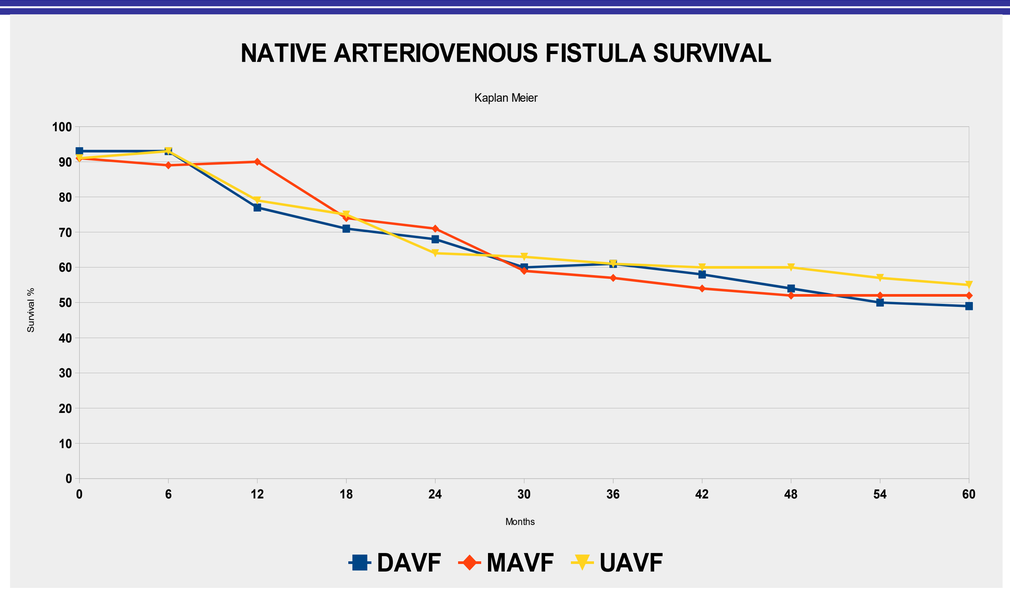
An adequate vascular access (VA) represent an essential requisite for efficient hemodialysis (HD). The native arteriovenous fistula (NAVF) proposed by Cimino and Brescia is still considered today to be the gold standard, but the inadequate vascular district, older patients with several comorbidities and a reduced life expectancy have made the VA preparation a very hard challenge. VA failure is an important cause of morbidity and mortality for patients in HD: the most frequent complications are thrombosis and stenosis. We have retrospectively studied, with a 5 years follow up period, the NAVF patency rate in our dialysis unit.

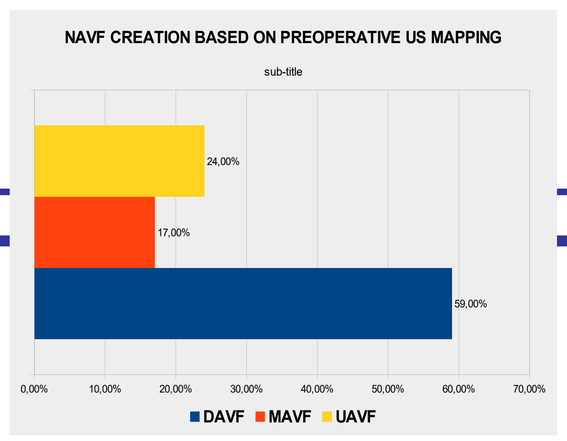
METHODS

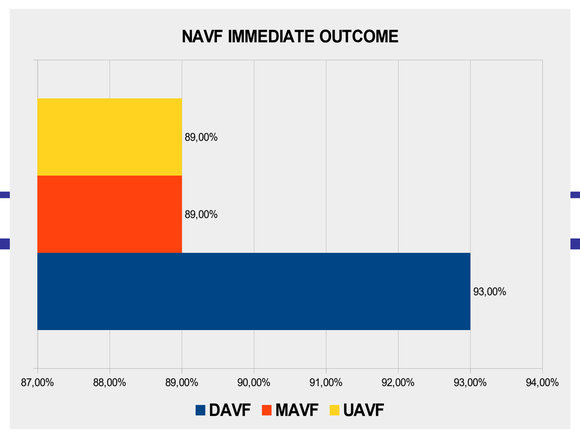
We reviewed the NAVF performed in incident dialyzed patients from January 2004 to December 2011. All the VA was placed by the same interventional nephrologist and surgeon team. The day before the intervention all patients have done clinical evaluation: arteries and veins of both arms and forearms were examined by ultrasonography (US) using International Guideline for avoiding surgery in patients with no adeguate vessels. Several anatomic parameters including feeding artery internal diameter, resistance index and arterial blood flow before and at reactive hyperemia and internal diameter of the vein, were measured. Surgical operations were performed under local anesthesia using lidocaine hydrocloride. Mechanical dilatation was used for treating vein vasospasm. The target arteriotomy size was 5 to 7 mm. Anastomosis was created with a continuous suture technique using CV-7 Gore Tex. Immediate outcome of NAVF was recorded as well as primary failure. Cumulative survival of functioning VA was calculated using Kaplan-Meier analysis censored for patient's death or sospension of dialysis treatment with functioning VA: we considered the time from placement to permanent abandonement of NAVF. A well functioning NAVF was considered only a blood flow at least of 250 ml/m' during several treatment. We evaluated the primary failure and the cumulative survival difference of distal (DAVF), middle (MAVF) and upper arm fistula (UAVF).

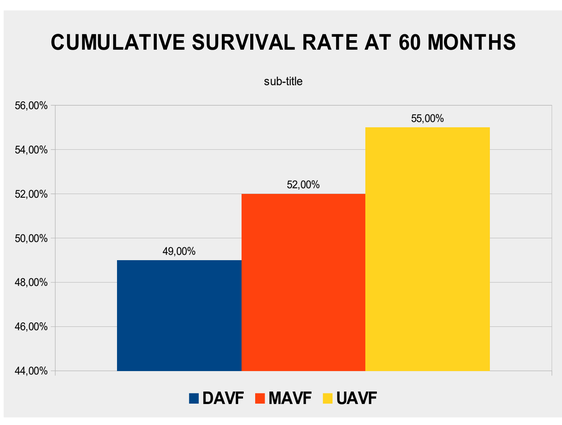
RESULTS

151 patients were recruited. Mean age was 67 ± 14 (range 29-81), 91 were male and 60 were female. We have not observed statistical difference in the distribuition of cardiovascular disease, diabetes or other comorbidities in the three groups. Patient gender and age were not associated with NAVF patencies. Based on preoperative US evaluation, in 59% of patients NAVF was placed in distal position, 17% in middle position and 24% in upper position. Primary failure was DAVF 7%, MAVF and UAVF 11%. DAVF cumulative survival rate at 1, 2, 3, 4 and 5 years were respectively 77%, 68%, 61%, 54% and 49%. MAVF showed a survival rate of 80%, 71%, 57%, 52% and 52%; UAVF cumulative survival rate were respectively 79%, 72%, 60%, 60% and 55%.









CONCLUSIONS

In our HD population the creation of NAVF is one of the biggest problems that a nephrologist has to face. Despite of an high mean age we have performed an elevated number of DAVF in our patients (59%). Preoperative US mapping is necessary for maintain an high rate of VA success (DAVF 93%, MAVF and UAVF 89%) and avoiding surgery in patients with no adequate vessels: US is noninvasive and it's easy to use without the need for contrast. A dedicated teamwork with a vascular surgeon, an angioradiologist and a nursing staff can help in achieving our goals. At the end of the 5 years follow up period we have observed best results with UAVF (55% cumulative survival rate) and we haven't observe a statistical difference with the other two groups.

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