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Background and Aim

Peripheral arterial disease (PAD) is common in the end stage renal disease (ESRD) population and has a substantial impact on the mortality of these patients. After a major amputation of a lower limb due to chronic limb ischemia (CLI) the one-year mortality reaches almost 50% and is comparable to the survival after acute myocardial infarction. Therefore, effective treatment is crucial for dialysis patients prior to the appearance of symptoms of CLI. In patients unsuitable for any reopening procedure or in whom revascularization attempts have failed the use of prostanoids is recommended despite lack of data in this population.

Methods

To evaluate this approach we retrospectively analysed all patients treated with Alprostadil for CLI in our institution from 2000 to 2013. Follow up started with the first application of Alprostadil, the follow up was 1 year. The primary end point was the 1-year mortality or amputation rate.

Results

The mean age of the study population of 86 patients was 70,5 years (SD 10,94), 26 (30,3%) were female, 55 (64%) patients were diabetic and 66 patients (76,7%) suffered from coronary artery disease, 33 (38,4%) from cerebrovascular disease and 18 (20,9%) from congestive heart failure. Mean dialysis vintage was 18,5 months, mean duration of Alprostadil therapy from the first application was 1,8 months.

The rate for amputation or death was 56%, the risk for amputation alone in the first year was 36% and the 1-year mortality alone was 35%. The multivariate Cox regression model showed a significant correlation of the primary endpoint with male sex (HR 2,065; CI 95%; p=0,042) and dialysis vintage (HR 1,006; CI 95%; p=0,041).

Conclusions

Our study confirms the high prevalence of chronic limb ischemia in the dialysis population and the tremendous mortality and amputation risk. In comparison to published data Alprostadil therapy seems to provide no additional effect compared to revascularization procedures alone. In consideration of its side effects in dialysis patients noncritical administration of Alprostadil in chronic limb ischemia should be reconsidered.

Table 1. Patient characteristics and selected parameters

	n	%
PAD – localization: pelvis	9	10,5
upper leg	22	25,6
knee	8	9,3
lower leg	47	54,7
Smoker	43	50,0
Diabetes mellitus	55	64,0
CAD	66	76,7
CVD	33	38,4
Heart failure	18	20,9
Amputation or Death	51	59,3
Death	30	34,9
Amputation alone	31	36,0
PTA	31	36,0
Bypass	14	16,3
Myocardial infarction	4	4,7

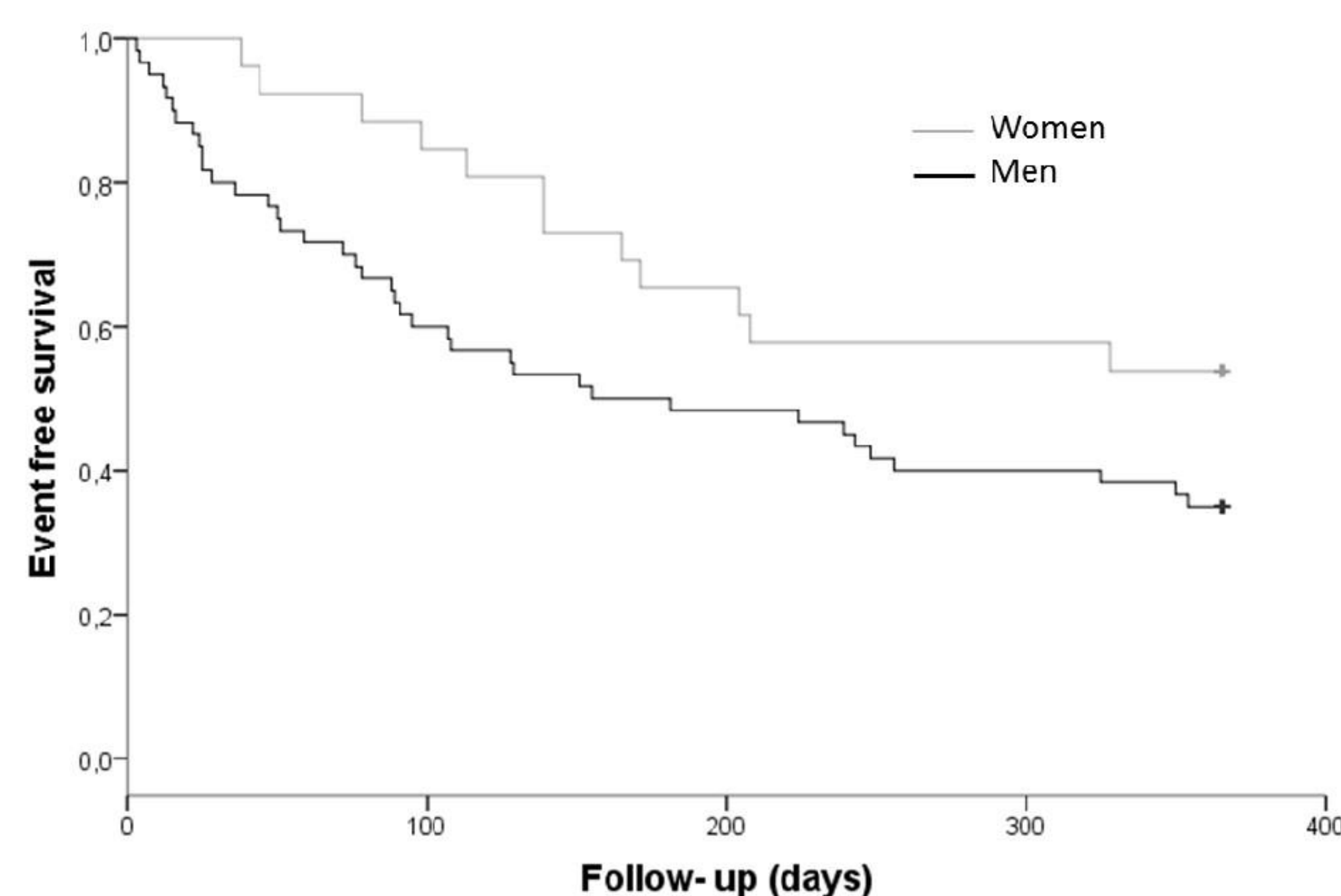
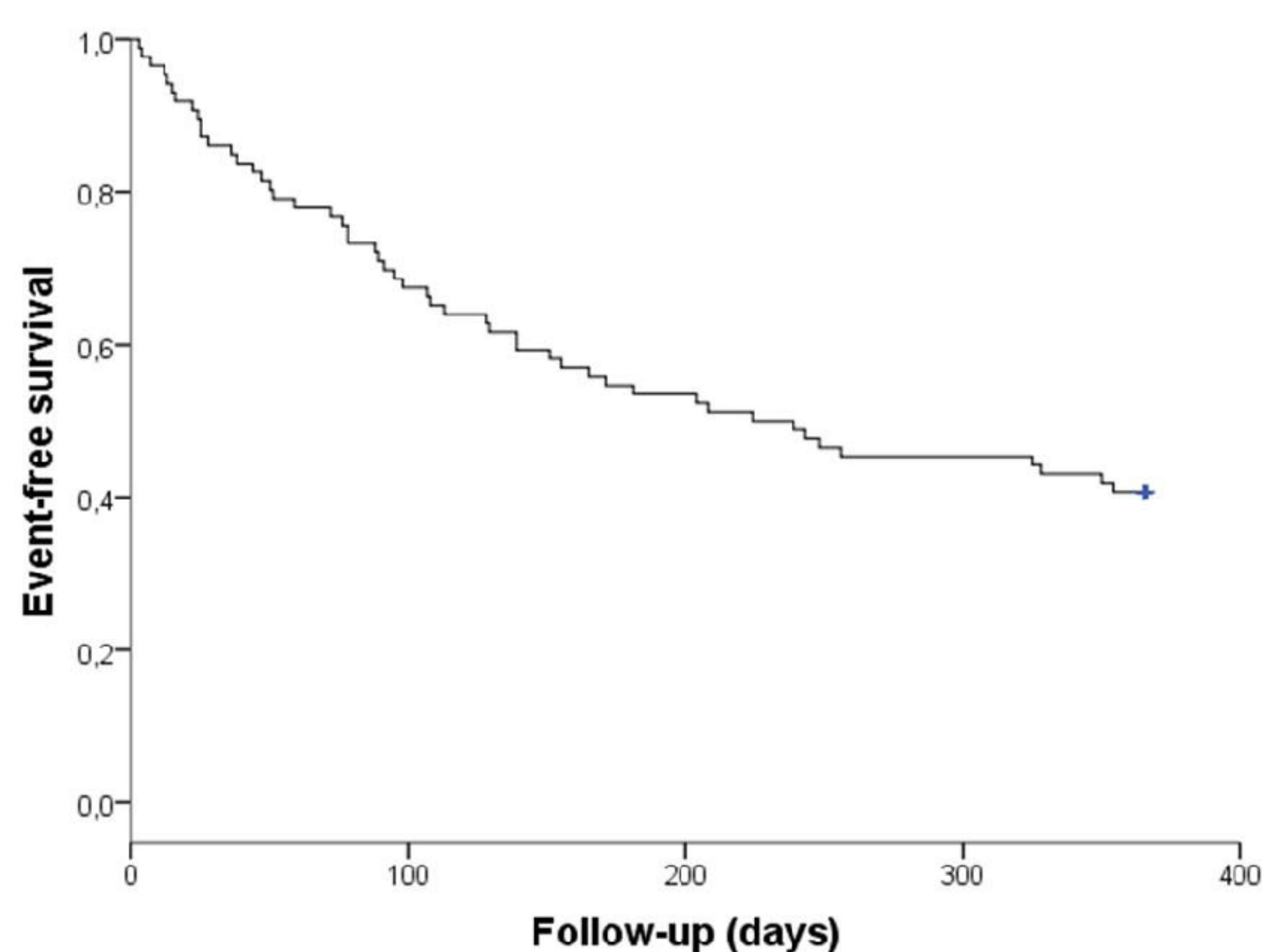
Abbreviations: ; PAD, peripheral artery disease; CAD, coronary artery disease; CVD, cerebrovascular disease; PTA, percutaneous transluminal angioplasty;

Table 2. Patient outcome

	p	HR
Age	,703	1,005
Sex (male)	,042	2,065
Diabetes mellitus	,137	1,721
Smoker	,530	,822
CAD	,157	,614
CVD	,847	,938
HF	,758	,881
Dialysis-vintage	,041	1,006
PAD - stage	,995	,996

Abbreviations: ; PAD, peripheral artery disease; CAD, coronary artery disease; HF, heart failure; CVD, cerebrovascular disease;

Survival or Amputation (Censor Death or Amputation, 1 year)



Level of amputation:



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