Myocardial infarction impact in lower limb amputation in patients with peripheral artery disease.

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Objective:

Lower limb amputations (LLA) for vascular causes are associated with significant long term morbidity and mortality, mostly attributed to cardiac disease. Although some studies have focused on establishing the cardiovascular risk in patients with a history of lower limb amputations and their medium/long term mortality, few studies have focused on evaluating the history of cardiac events as an independent predictor of LLA. This study investigates the association of acute myocardial infarction (AMI) in patients with peripheral arterial disease (PAD) and its relationship with LLA.

Methods:

Demographic data was collected retrospectively from 125 patients with diagnosis of PAD; the median age was 66 years (56-74). Eighty-nine patients were men (71%), seventy-three patients (58%) had a history of DM, 51 patients (41%) had previous AMI, with a history of coronary stent placement in 32 (49%). Patients were classified into two groups based on LLA (both major amputation and minor amputation) and those who lack thereof. Using univariate tests, variables that showed statistical significance in relation to lower limb amputation were age ($p=0.013$) and previous acute myocardial infarction ($p<0.001$).

Results:

Differences identified in the univariate testing were entered in a multivariate model to identify independent predictors for lower limb amputation. After adjusting for age and sex, history of myocardial infarction was established as an independent predictor for LLA and major lower limb amputation, ($p<0.001$) with an OR of 8.22 [3.40, 21.67] and OR of 7 [2.982, 20.273] respectively.

Conclusion:

AMI history was associated with greater risk of LLA in patients with PAD, therefore, close follow up and optimization of comorbidities may change patients prognosis. Additionally, best medical treatment and periodical evaluation of limb vascular perfusion should be employed to prevent lower limb loss in those patients with history of AMI.

Table 4. Multivariate analysis of patients with amputation

	OR	95% CI	p value
AMI	8.221	[3.407, 21.676]	<0.001
DM	0.542	[0.217, 1.310]	0.179
HT	0.411	[0.162, 1.004]	0.054
CKD	0.458	[0.133, 1.426]	0.192
FU	0.890	[0.341, 2.243]	0.807

AMI: Acute myocardial infarction DM: Diabetes Mellitus HT: Hypertension CKD: Chronic kidney disease FU: Foot ulcer

Fig 1 Multivariate analysis general lower limb amputation

Multivariate analysis major lower limb amputation

Table 5. Multivariate analysis of patients with major amputation

	OR	95% CI	p value
AMI	7.430	[2.982, 20.273]	<0.001
DM	0.662	[0.263, 1.639]	0.179
HT	0.425	[0.167, 1.061]	0.054
CKD	0.405	[0.100, 1.354]	0.192
FU	0.487	[0.171, 1.292]	0.807

AMI: Acute myocardial infarction DM: Diabetes Mellitus HT: Hypertension CKD: Chronic kidney disease FU: Foot ulcer