

# Outcomes Following Lower-Limb Angioplasty in Diabetes Mellitus

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## Introduction

Patients with diabetes mellitus (DM) are generally considered to have poorer outcomes following lower limb angioplasty (LLA). However, this conclusion is based on cohorts who are poorly matched for potential confounding factors<sup>1-3</sup>. The aim of this study was to perform a comparison of outcomes following LLA in a cohort of patients with DM matched for cardiovascular risk factors to patients without DM.

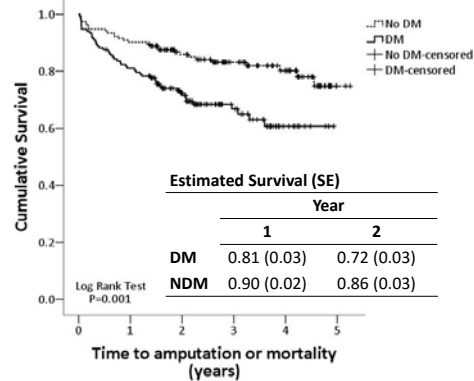
## Methods

All patients who underwent LLA between July 2010 and May 2015, at a large UK-based tertiary-teaching-hospital, were identified. All patients who had an indication for LLA other than peripheral vascular disease were excluded, i.e., major trauma or planning plastic surgery. Those with DM were matched for age, sex, ethnicity, smoking, hypertension, hypercholesterolaemia and renal status, with patients without DM. Matching was performed with IBM SPSS with the aim of only including patients who matched identically (age ± 5 years).

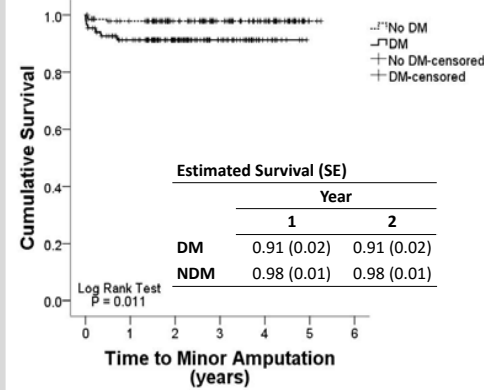
**Primary outcome:** Amputation-free-survival. **Secondary outcomes:** Subsequent revascularisation (percutaneous or open), minor amputation, major amputation, all-cause mortality

## Results

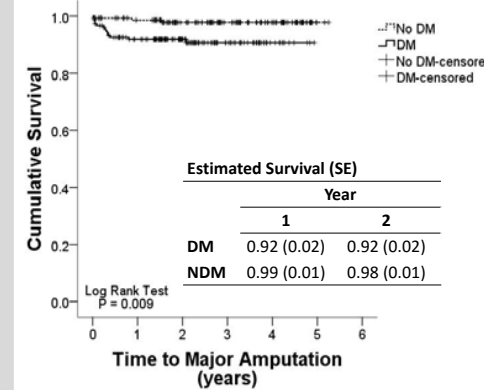
### Amputation-Free-Survival



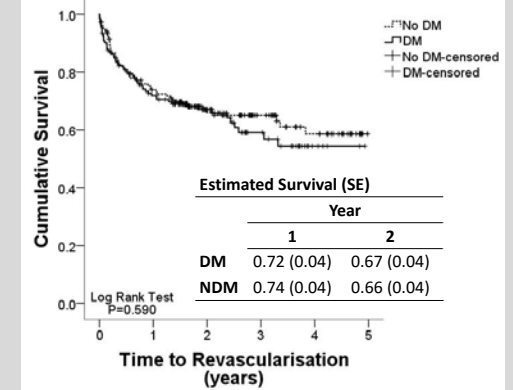
### Minor Amputation



### Major Amputation



### Revascularisation

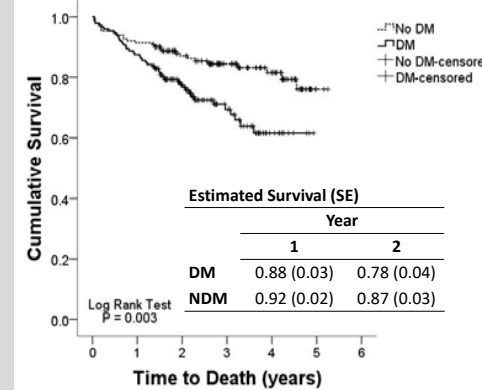


## Demographics

	Percentage (n)		P-value
	Diabetes (n=153)	No Diabetes (n=153)	
Mean age (SD)*	70.3 (9.17)	70.4 (9.37)	0.97
Mean length of follow up (SD)*	2.3 (1.13)	2.9 (1.37)	<0.001
Sex**			1.00
Male	71.9 (110)	72.5 (111)	
Female	28.1 (43)	27.5 (42)	
Ethnic group**			1.00
White	97.4 (149)	97.4 (149)	
Asian	1.3 (2)	1.3 (2)	
Black	1.3 (2)	1.3 (2)	
Smoking**			0.99
Never smoked	11.1 (17)	11.1 (17)	
Ex-smoker	68.0 (104)	67.3 (103)	
Still smoking	20.9 (32)	21.6 (33)	
Hypertension**			1.00
Yes	83.7 (128)	83.7 (128)	
No	16.3 (25)	16.3 (25)	
Hypercholesterolaemia**			0.91
Yes	60.8 (93)	62.1 (95)	
No	39.2 (60)	37.9 (58)	
Renal function**			1.00
Normal	96.7 (148)	96.7 (148)	
Renal Failure	3.3 (5)	3.3 (5)	

\*Unpaired T-test  
\*\*Fisher exact test

### All Cause Mortality



## Discussion

A literature review conducted as part of this research has shown that this is the first time that outcomes following angioplasty have been compared following matching for major cardiovascular risk factors in cohorts of patients with DM and without DM. We have confirmed that DM is a major risk factor for amputation and mortality. However, the presence of DM does not have an impact on the rate of revascularisation procedures.

The evidence from the literature review shows an equal split between papers who found comparable outcomes for primary patency<sup>4-9</sup> and those who found poorer rates in the DM cohort<sup>1-3,10-12</sup> (6 vs 6). There was also an almost equal split between those who found equal amputation rates between cohorts<sup>4-7,10-12</sup> and those who found higher rates in the DM group<sup>1-3,8,13</sup> (7 vs 5). The currently presented study adds evidence to those studies whose results were in accordance with us. Ways to develop this work include matching for types of DM and presenting complaint. Our cohorts were not matched for length of follow-up although this is probably explained by the higher rate of mortality in the DM group.

## Conclusions

We have shown for the first time that, when major confounding factors are accounted for, DM remains a significant risk factor for amputation and all-cause mortality in patients with established peripheral vascular disease. The presence of DM does not have an impact on the rate of revascularisation procedures.

### Number of Patients at Risk

	Year					
	0	1	2	3	4	5
DM	153	123	78	40	11	0
NDM	153	138	102	70	45	2

## References

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