

Long Term Results of Valve Operations In Patients With Diabetes

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Background

- Both insulin-dependent and non-insulin-dependent diabetes adversely affect survival in patients with CAD after CABG¹.
- The influence of diabetes on survival after valve operations is less defined.
- We analyzed the effect of diabetes on short and long term outcomes in patients undergoing valvular operations with and without CABG.

1. van Straten AH, et al. Eur J CT Surg. 2010 May;37(5):1068-74

Methods

- 2,200 patients had cardiac surgery at a single VA Medical Center between 1990 and 2008.
- 362 patients underwent either valve replacement or repair.
- Presence of diabetes was collected prospectively and captured into the Veterans Affairs electronic medical record (CPRS).
- All cause mortality was assessed utilizing both the VA Continuous Improvement in Cardiac Surgery Project and the death data field in the VA CPRS-VISTA electronic medical record.
- Long term survival was compared in patients with and without diabetes.

Patient characteristics

	Diabetic	Non-diabetic	p-value
	N=69 (19%)	N=286 (80.5%)	
Male	69 (100%)	280 (98%)	0.23
	Mean (SD)	Mean (SD)	p-value
Age	67(+/-8.8)	63(+/-11.9)	0.0068
BSA	1.96(+/-0.20)	2.01(+/-0.21)	0.03
Cr	1.47(+/-1.09)	1.50(1.06)	0.86

Preoperative risk factors and comorbidities

	Diabetic	Non-diabetic	p-value
Cardiomyopathy	36(52.2%)	168(58.7%)	0.32
COPD	36 (52.2%)	123(43%)	0.17
Prior heart surgery	7(10.1%)	25(8.7%)	0.72
Prior MI	22(31.9%)	72(25%)	0.28
Preop IABP	4(5.8%)	13(4.5%)	0.66
PVD	25(36.2%)	69(24%)	0.041
	Mean (SD)	Mean (SD)	p-value
LVEDP (mmHg)	20.0(+/-11.8)	20.4(+/-10.1)	0.81
Mean PAP (mmHg)	18.96(+/-8.58)	18.0(+/-8.7)	0.49

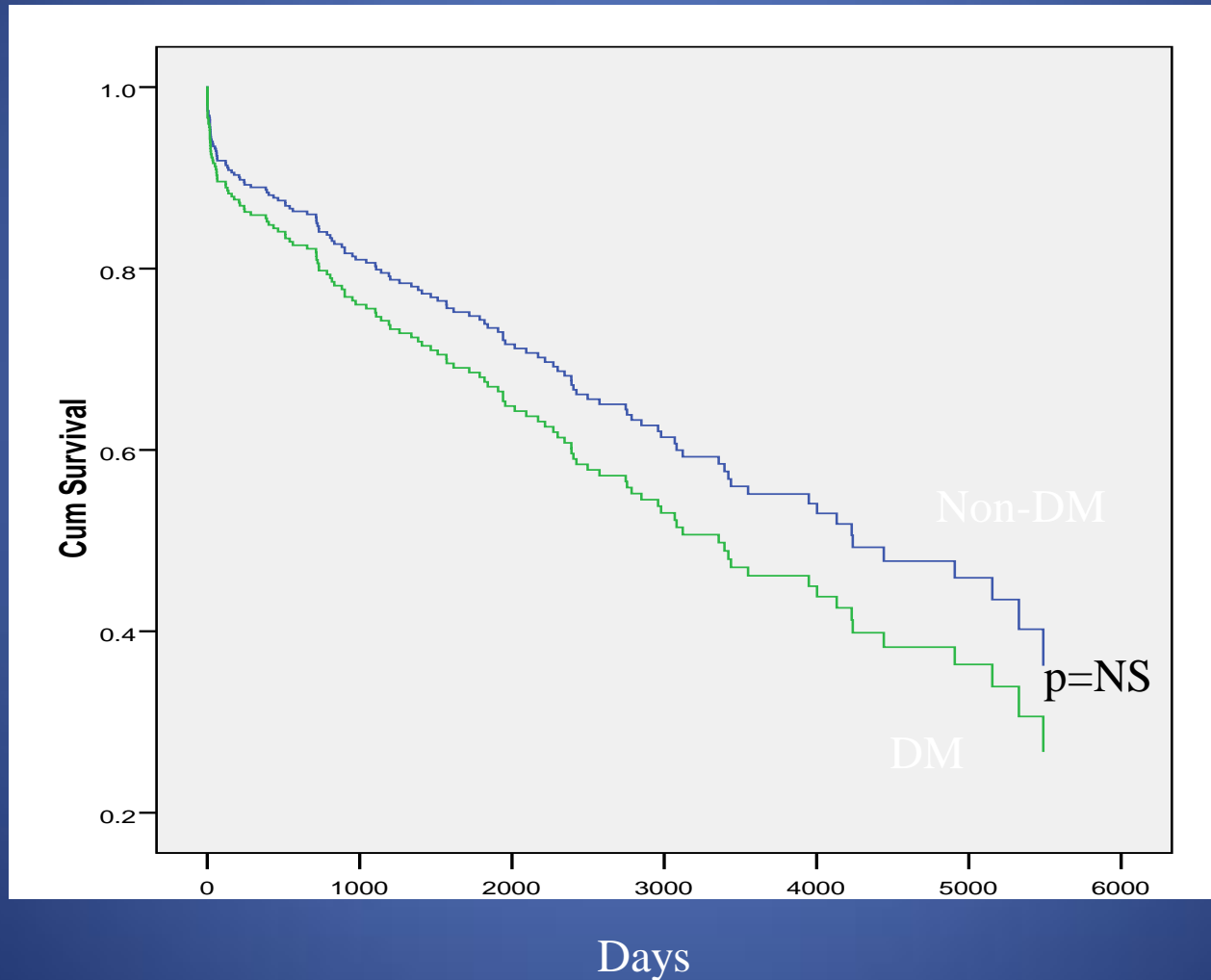
Operative data

	Diabetic	Non-diabetic	p-value
AVR	55(79.7%)	204(71.3%)	0.16
MVR	11(15.9%)	58(20.3%)	0.42
TVR	1(1.4%)	3(1%)	0.78
Repair	4(5.8%)	25(8.74%)	0.42
CABG+Valve	31(44.9%)	105(36.7%)	0.35
Arterial graft	19(27.5%)	52(18.2%)	0.087
	Mean (SD)	Mean (SD)	p-value
CPB time	117(35)	133(61)	0.082
Ischemic time	81(25)	89(30)	0.113

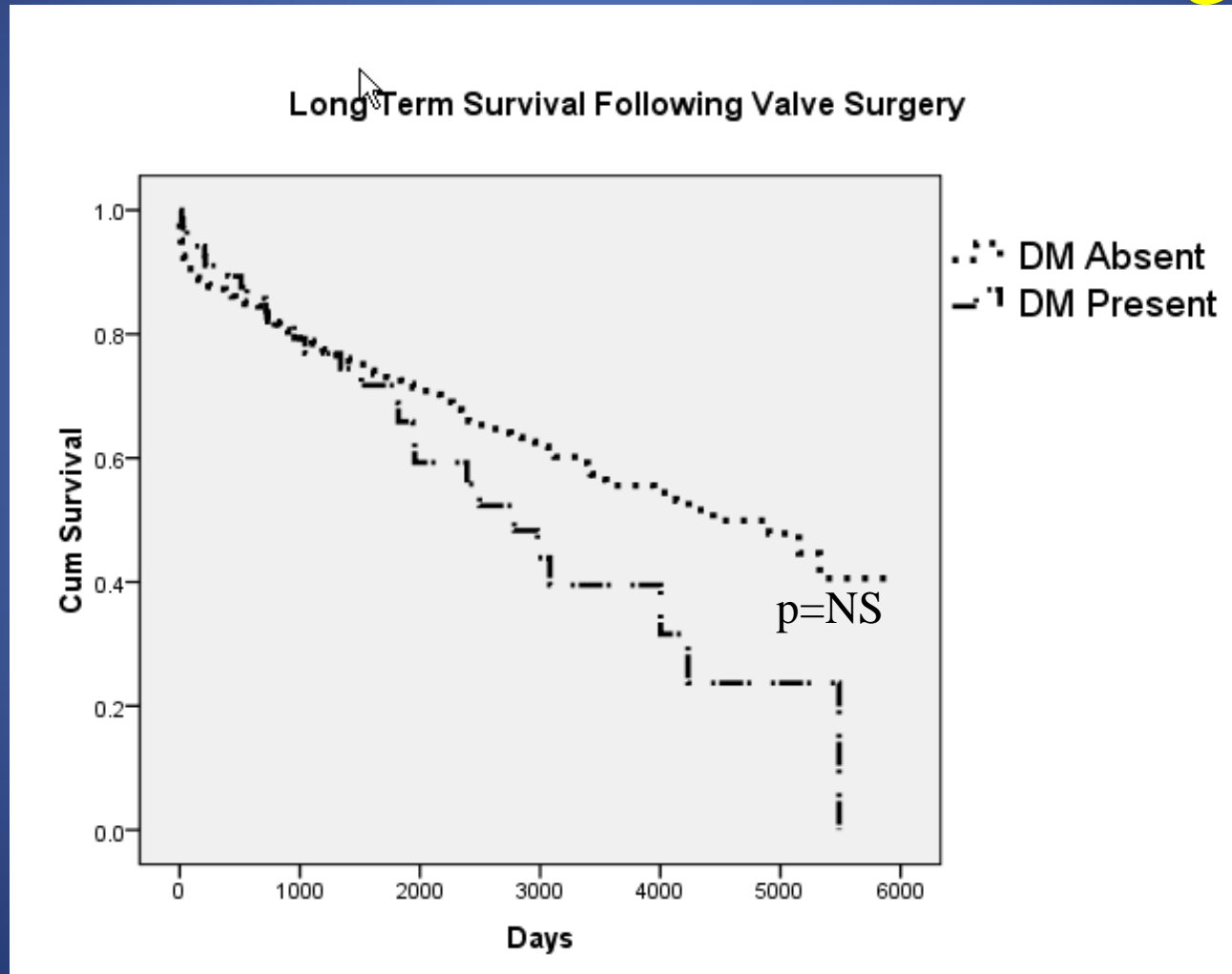
Complications and operative mortality

	Diabetic	Non-diabetic	p-value
Periop. MI	1(1.45%)	7(2.45%)	0.62
Renal failure	2(2.9%)	6(2.1%)	0.69
Reop. Bleed	3(4.3%)	13(4.5%)	0.94
Vent>48hrs	7(10.1%)	26(9.1%)	0.79
Stroke	1(1.4%)	6(2.1%)	0.78
Any complication	10(14.5%)	60(21%)	0.23
30-day mortality	2(2.9%)	21(7.3%)	0.18

Survival in diabetic versus non-diabetic patients after all valve surgery



Survival in diabetics versus non-diabetics after isolated valve surgery



Conclusions

- Diabetic patients with valvular disease requiring surgical intervention have similar preoperative risk factors and comorbidities to non-diabetic patients
- The morbidity of valve surgery is similar in diabetic and non-diabetic patients
- Diabetic patients have a similar long term survival to non-diabetic patients after isolated valve surgery or combined CABG+ valve surgery
- The choice of valve device should not be influenced by the presence of diabetes.