IMPACT OF DIABETES ON OUTCOMES OF CARDIAC SURGERY IN SOUTHEAST ASIAN PATIENTS

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INTRODUCTION

Diabetes mellitus is a major health problem worldwide today with Asia having the greatest disease burden. Although diabetes is rapidly increasing in Asia and has been shown to be associated with worse cardiac surgery outcomes, no research has been done to study the impact of diabetes on cardiac surgery outcomes in a Southeast Asian cohort [1]. Hence, this study aims to delineate the impact of diabetes in a multi-ethnic Southeast Asian cohort undergoing cardiac surgery.

METHODS

We analysed data from 2831 adult patients undergoing elective cardiac surgery, from 2008 to 2010 at the two main heart centres in Singapore. Perioperative variables and outcomes of diabetics and nondiabetics were compared.

RESULTS

Patients with diabetes tended to be older, more obese, Indian, hypertensive and have renal impairment. Compared to nondiabetics, diabetics had a higher relative higher risk for postoperative hyperglycemia (RR 1.575, CI 1.500 – 1.654), AKI (RR 1.419, CI 1.269 – 1.587), new need for dialysis (RR 2.397, 1.573 – 3.653), postoperative infection (RR 2.110, CI 1.231 – 3.617) and ICU readmission (RR 1.768, CI 1.253 – 2.495) (Table 1).

Outcome	No. of events	Absolute risk/ 1000 patients	Relative Risk (95% CI)	Relative Risk (95% CI) in Western Cohort Study	Ref
Postoperative Hyperglycemia					
Nondiabetic	846	299	1.000	–	–
Diabetic	1166	412	1.575 (1.500 – 1.654)		
AKI					
Nondiabetic	386	136	1.000	1.000	[1]
Diabetic	479	169	1.419 (1.269 – 1.587)	1.43 (1.26 – 1.61)	
New dialysis					
Nondiabetic	31	11	1.000	–	–
Diabetic	65	23	2.397 (1.573 – 3.653)		
Postoperative Infection					
Nondiabetic	20	7	1.000	1.000	[2]
Diabetic	37	13	2.110 (1.231 – 3.617)	2.03 (1.13 – 4.05)	
ICU readmission					
Nondiabetic	51	18	1.000	1.000	[3]
Diabetic	79	28	1.768 (1.253 – 2.495)	1.39 (1.17–1.66)	

Table 1 Relative risks for clinical outcomes in Southeast Asian diabetics compared to similar Western cohorts. AKI, Acute Kidney Injury; ICU, Intensive Care Unit.

CONCLUSION

In conclusion, diabetes is associated with increased risk for renal dysfunction, hyperglycemia and infection after cardiac surgery as compared to nondiabetics, similar to the relative risks of diabetics observed in Western populations. As such, diabetic patients undergoing cardiac surgical interventions should receive special attention during the perioperative period to prevent the identified adverse effects, thereby improving postoperative outcomes of diabetic patients.

REFERENCES

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