



# INFLUENCE OF BODY MASS INDEX AND GLUCOSE METABOLISM ON RESULTS OF CABG FOR HIGH RISK PATIENTS

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THE 6TH ANNUAL HEART IN DIABETES

Jun 24, 2022 - Jun 26, 2022

## INTRODUCTION

the presence of diabetes mellitus and overweight can complicate the course of the perioperative period in cardiac surgery patients with coronary artery disease

## OBJECTIVE

to study influence of body mass index and glucose metabolism on results of CABG for high risk patients.

## METHODS & MATERIAL

retrospective analysis of 194 high-risk randomly selected patients who were discharged after CABG. For all patients performed ECG, ECHO, coronary angiography and cardiac surgery.

**RESULTS** analysis of the BMI shown that 35 (18.04%) patients had normal weight, 86 (44.3%) - were overweight, I stage obesity had 58 (29.8%), II stage – 13 (6.7%), III st. obesity diagnosed in 2 (1.03%) cases. Impaired glucose metabolism (IGM) was found in 132 (68.04%) patients. Type 2 DM had 50 (25.7%) patients, between which only 4 (8%) had BMI < 25 kg/m<sup>2</sup>, 46 (92%) – BMI > 25 kg/m<sup>2</sup>. IGT had 82 (42.2%) patients among which 15 (18.2%) had normal weight, 67 (81.7%) – BMI > 25 kg/m<sup>2</sup>.

For all patients we performed CABG, in 187 (96.3%) cases off-pump. Average number of grafts was 3.37±0.96. Comparing postoperative period of patients with BMI < 25 kg/m<sup>2</sup> & normal glucose metabolism (n=16) against patients with BMI > 25 kg/m<sup>2</sup> & impaired glucose metabolism (n=113) we found atrial fibrillation in 1 (6.25%) against 30 (26.5%) cases (p=0.0753); neurological dysfunctions 0 (0%) against 6 (5.3%), p=0.3452; wound infections 0 (0%) against 4 (3.5%), p=0.4446; pneumonia 0 (0%) against 4 (3.5%), p=0.4446 and acute kidney injury 0 (0%) against 2 (1.7%), p=0.5917.

Postoperative features	All patients, n=194	BMI>25 kg/m <sup>2</sup> , n=159	IGM, n=132	BMI<25 kg/m <sup>2</sup> & normal glucose, n=16	BMI>25 kg/m <sup>2</sup> & IGM, n=113
Mechanical ventilation time, h	7.4±4.07	7.4±4.2	7.6±4.5	7.1±2.4	7.6±4.6
Blood loss, ml	334.7±89.7	336.4±96.4	338.1±67.2	328.6±54.4	340.3±70.4
Hemotransfusion	47 (24.2%)	35 (22%)	31 (23.4%)	6 (37.5%)	25 (22.1%)
Acute heart failure II-III st.	5 (2.5%)	3 (1.8%)	5 (3.78%)	1 (6.25%)	3 (2.6%)
Acute kidney injury	2 (1.03%)	2 (1.2%)	2 (1.5%)	0 (0%)	2 (1.7%)
Postoperative AF	40 (20.6%)	36 (22.6%)	33 (25%)	1 (6.25%)	30 (26.5%)
Average ICU stay, days	3.18±2.2	3.1±2.2	3.2±2.4	2.8±1.4	3.2±2.5
Stroke	4 (2.06%)	4 (2.5%)	3 (2.2%)	0 (0%)	3 (2.6%)
TIA	2 (1.03%)	2 (1.2%)	2 (1.5%)	0 (0%)	2 (1.7%)
Wound infection	5 (2.5%)	4 (2.5%)	5 (3.78%)	0 (0%)	4 (3.5%)
Rethoracotomy	2 (1.03%)	1 (0.6%)	2 (1.5%)	0 (0%)	1 (0.8%)
Pneumonia	4 (2.06%)	4 (2.5%)	4 (3.03%)	0 (0%)	4 (3.5%)
Discharge, days	8.4±3.5	8.4±3.6	8.5±3.9	8.2±2.6	8.6±3.9

## CONCLUSIONS

1. In high-risk patients with CAD before CABG impaired glucose metabolism diagnosed in 132 (68.04%) cases and BMI > 25 kg/m<sup>2</sup> – in 159 (81.9%).
2. Metabolic disorders influenced on appearance of infection, neurological and arrhythmic complications in early postoperative period.
3. Off-pump CABG minimizes postoperative complications for high-risk patients.

## REFERENCES

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## DISCLOSURE

Nothing to disclosure