

# Perioperative glucose management in patients undergoing cardiac surgery

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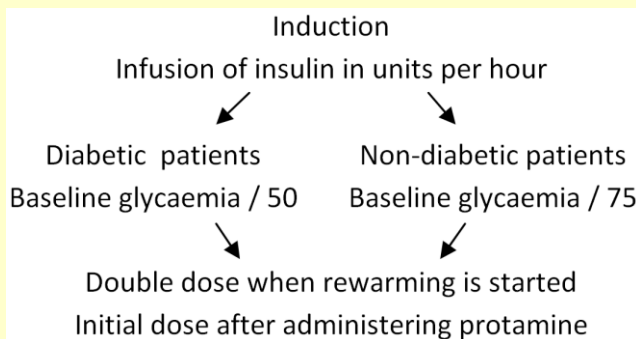
## Background

Despite the development of various insulin protocols, perioperative hypo- and hyperglycaemic events during cardiopulmonary bypass remain a point of concern.

The University of Ghent Insulin Protocol has been found to keep perioperative glycaemia within narrow limits, while diabetes mellitus, use of corticosteroids and age are risk factors for deviation of pre-induction glycaemia.

## Goal of Study

In this study we sought to identify independent risk factors for significant perioperative hyperglycaemic (> 180 mg/dL) and hypoglycaemic (< 70 mg/dL) events when using the UGIP.



## Methods

Retrospective cohort study.

After exclusion, data from 776 cardiac surgery patients remained.

Relative risks were calculated for the following variables:

- Redo operation
- CPB duration > 60 min
- Age > 70 years
- Gender
- Temperature on CPB < 32°C
- Nadir haematocrit < 24%
- Inotropic and/or vasoactive support
- Corticosteroids
- Diabetes mellitus

The statistically significant variables were included in a multiple regression analysis.

## Results

		Backward Stepwise Regression			Multiple linear regression
		RR	95% CI	p value	p value
Hyperglycaemia (n = 16, 2%)	Male gender	0.34	0.13 – 0.90	0.029	0.120
	Inotropic support	3.81	1.40 – 10.37	0.01	0.019
	Corticosteroids	5.83	1.96 – 17.30	0.008	0.006
Hypoglycaemia (n = 13, 1.7%)	Inotropic support	4.87	1.40 – 17.09	0.035	0.536
	Diabetes mellitus	4.87	1.23 – 11.13	0.028	0.013

## Conclusion

The following variables appeared to be independent risk factors for hyper- or hypoglycaemic events when using the UGIP:

- Glycaemia < 70 mg/dL: corticosteroids and inotropic and/or vasoactive agents.
- Glycaemia > 180 mg/dL: diabetes mellitus.