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MEETING ABSTRACT Open Access

Intensive versus conventional insulinotherapy after elective and on-pump myocardial revascularization in the elderly patient: a prospective and randomized study

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Background

In cardiac surgery patients, hyperglycemia was found to be an independent post-operative risk factor for the development of hyperlactatemia and associated with increased morbidity and mortality [1].

Materials and methods

Design: analysis of a prospective and randomized collected database.

Patients: A total of 40 patients (23M; 17F) aged >65 (ASA II-III) submitted to elective on-pump myocardial revascularization from September 2007 to May 2009.

Randomization: on ICU admission, once obtained a preoperative informed consent, the patients were randomly assigned to Group 1 (intensive insulinotherapy during the first 24 hours of ICU stay aimed at glucose levels between 80-110 mg/dl) or Group 2 (conventional insulinotherapy during the first 24 hours of ICU stay aimed at glucose levels between 160-180 mg/dl).

Data collection: Preoperative and each hour (during the first 24 hours in ICU) assessment of Glucose and Lactate blood levels and Body Temperature; Hemodynamic parameters on ICU admission and after 2, 6, 12 and 24 hours. Preoperative and postoperative (12 and 36 hours after ICU admission) assessment of C-Reactive Protein (CRP), White Blood Cells (WBC) and Platelets (PLT) blood levels. Admission, Total Maximum (TMSOFA) and Δ SOFA score (5). Infection Probability Score (IPS) 36 hours after ICU admission.

Statistics: Within-between groups analysis, one-way ANOVA and unpaired t-Test were used when appropriate.

Results

No difference in preoperative and operative variables (p=NS for all measurements). Glucose and Lactate blood levels were lower in Group 1 ($p < 0.0001$). Haemodynamic parameters were comparable between Groups except Indexed Vascular Resistances that were higher in Group 1 ($p<0.05$). CRP levels were lower in Group 1 ($p<0.0001$), PLT levels were higher in Group 1 ($p<0.0001$). Admission and TM SOFA score were lower in Group 1 ($p<0.0001$), IPS was lower in Group 1 ($p<0.01$).

Conclusions

Intensive insulinotherapy after elective and on-pump myocardial revascularization modulates the inflammatory pattern and can improve clinical response in this setting.

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