II - 3 (059)
PRE- AND POST-CONDITIONING EFFECTS OF MILRINONE AGAINST MYOCARDIAL STUNNING IN THE SWINE
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Myocardial stunning is defined as the prolonged contractile dysfunction following an ischemic episode that does not result in necrosis. The present study was carried out to clarify the cardioprotective effect against myocardial stunning of milrinone administered before ischemia or just after reperfusion in anesthetized open-chest swine. Twenty-eight swine were subjected to 12-min ischemia followed by reperfusion to make myocardial stunning. Myocardial contractility was assessed by percentage segment shortening (PSS). Group A (n = 9) received intravenous milrinone at a rate of 5 μg/kg/min for 10 min followed by 0.5 μg/kg/min for 10 min until 80 min before coronary occlusion. Group B (n = 7) received the same dose of milrinone starting at 1 min after reperfusion. Group C (n = 12) received saline in place of milrinone. Five swine in group C and 2 swine in group A had ventricular fibrillation or tachycardia after reperfusion, and thus they were excluded from further analysis. There were no significant differences in systemic hemodynamics, or coronary blood flow among the groups throughout the entire course. The percentage changes of RS5 from baseline at 50 min after reperfusion in groups A and B were 78 ± 9% and 79 ± 7%, respectively, which were significantly higher than that in group C (61 ± 11%). We conclude that milrinone administered before ischemia or just after reperfusion provides cardioprotection against myocardial stunning.

II - 4 (073)
VASCULAR STIFFNESS, VISCOSITY, AND INERTIA IN THE PATIENTS WITH CARDIOVASCULAR DISEASE
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Introduction: In the patient with cardiovascular disease, vascular structure and function are both damaged to render blood pressure unstable during anesthesia. We have previously proposed a vascular impedance measurement, which showed drastic change along sympathetic stimulation. In this study, we investigated these vascular impedance parameters during atrial fibrillation in the patients with or without cardiovascular disease.

Methods: Thirty patients scheduled for surgery were enrolled and divided into two groups with (group D, n=15) or without (group N, n=15) cardiovascular disease. Electrocardiogram, radial arterial pressure, and plethyslograph were compared to analyze vascular impedance stiffness (K), viscosity (η) and inertia (IM). These parameters were measured before and after anesthesia induction on-line with a personal computer.

Results: Prior to anesthesia, mean arterial pressure (MAP) was higher in group D, and anesthesia reduced MAP in both groups to the comparable level. K, η and IM before anesthesia were almost equal in both groups, and were reduced after anesthesia. Moreover, K (16.1 ± 4.8 mmHg) vs. 5.83 ± 2.34 mmHg, η (0.14 ± 0.08 mmHg/s vs. 0.30 ± 0.25 mmHg/s), and IM (0.06 ± 0.04 vs. 0.03 ± 0.02 mmHg/s) after anesthesia were higher in group D. These changes in K, η and IM were greater in group D, while MAP changes were greater in group D.

Conclusion: Reduced range and elevated values in vascular impedance during anesthesia induction may represent the impairment in regulation in vascular conditions/fibrillation in cardiovascular disease. Vascular dysfunction could be anticipated using vascular impedance measurements during anesthesia.

References:

II - 5 (096)
REMETFENATAN EXPERIMENTAL ANTITUMORAL PROPERTIES
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Introduction: Stimulation of K, and A-type potassium ion channels elicits antiarrhythmic effects and cardioactivating properties. Remifentanil, a powerful μ-opioid receptor agonist, has demonstrated a great efficacy and a wide safety margin, as well as a K- and A-type activities.

Objective: Investigate remifentanil antiarrhythmic activity on various experimentally-induced arrhythmias.

Materials and Methods: Three experimental groups (n=5) of anesthetized mongrel dogs (mound postnataal, 30 μg/kg, s.c.), with vagus nerves of auricular, ventricular, epicardial, and cardiac pacemaker. In the first group, remifentanil was infused in order to perform a dose-effect curve and value its hemodynamic actions. In a second group, remifentanil antiarrhythmic effect on a double stial arrhythmia model, in which an electric stimulation induced flutter occurs with an extrinsic-induced atrial flutters. On the third group, remifentanil effect on A-V dissociation was studied on the digoxin-induced digitals arrhythmias.

Results: A remifentanil bolus of 2 μg/kg did not produce hemodynamic instability. Therefore, this dose was chosen for the antiarrhythmic treatment. In the double stial arrhythmia model, it was observed that it cancels three of five arrhythmia atrial tachycardias and 2 of 3flutter. In digitals-induced arrhythmias, a bolus of 0.5 μg/kg reverted A-V dissociation and eliminated multiforme ventricular extrasystoles. It was also observed, a 40% increase of dopamine.

Conclusion: Our results support the fact that remifentanil is effective against different type of cardiac arrhythmias, specially those related with digitals. It also evidences the need of more experiments regarding its antiarrhythmic signaling mechanisms.

II - 6 (077)
THE EFFECT OF REMIFENTANIL AND DESFLURANE ON PANCREAS-ASSOCIATED PROTEIN DURING OPEN HEART SURGERY
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Introduction: Postoperative mortality and mortality rates are closely related with non-cardiac complications After cardiopulmonary bypass the incidence of acute pancreatitis is rare, but diagnosis and treatment of it is difficult. The pancreatic associated protein (PAP) is undeterminable in normal pancreatic secretion and overexpressed in the acute phase of pancreatitis. We aimed to investigate acute pancreatitis developed and ischemia in patients anesthetized with remifentanil infusion and desflurane anesthesia after cardiopulmonary bypass by PAP.

Methods: 20 patients, ASA grade III scheduled for open heart surgery were included. Anesthesia was induced with thiopentone and vecuronium. Postoperative mortality and mortality rates are closely related with those non-cardiac complications. Postoperative mortality was made with 1-1.5 μg/kg remifentanil infusion and 5% 50% and 1% 50% in Group 1, 4% Desflurane, 5% 50% and 9% 50% in Group 2, 85% mortality. It also dose were based on the routine membrane. To assess pancreatic functions of patients before the operation, before, after the cardiopulmonary bypass, after the operation 1st, 2nd and 7th day PAP, amylase and lipase values were recorded. PAP values (more than 10μg/L) were accepted as normal. Friedman, unpaired students t, chi-square, Mann-Whitney U and Wilcoxon tests were used for statistical analysis.

Results: During open heart surgery there were no differences within the groups and between the groups regarding amylase, lipase and PAP plasma concentrations. In group 1 use of isoprotic agent was significantly higher (p<0.05). BS values were similar in groups.

Discussion: Although there were no differences between the groups in pancreatic injury followed by PAP in desflurane group use of isoprotic agent was high. Key Words: Pancreas-associated proteins, remifentanil.