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Commentary **Published Date:-2018-11-21 00:00:00**

Is there an ideal blood pressure during cardiopulmonary bypass to prevent postoperative cerebral injury? – What does the recent evidence say?

Post cardiac surgery stroke is a devastating complication with an incidence as high as 50%1. The association between intra-operative mean arterial blood pressure (MAP- better called linear blood pressure) during cardiopulmonary bypass (CPB) and the development of postoperative stroke-as diagnosed by neuroimaging- and of cognitive dysfunction (POCD) is controversial. This is due to differences in the study populations, stroke assessment tools, operation and conduction of MAPs, variations in neurocognitive testing and duration of follow up. As a result there is a gap in the knowledge on an ideal MAP as a preventive measure of post CPB stroke and POCD.

Research Article **Published Date:-2018-11-19 00:00:00**

Influence of Histidine on the contractility and adrenaline inotropic effect in the experiments with myocardium of right ventricular of Non pregnant and Pregnant Rats

It was investigated contractility and adrenoreactivity of intact myocardium strips of right ventricular in experiment with 60 rats. They were assessed by the force of induce contraction and its changes under the influence of adrenaline (10-9 or 10-5 g / ml). Found that these indicators do not depend on the phases of the estrous cycle and the presence of pregnancy. Histidine (10-10-10-4 g / ml) did not increase the response to adrenalin (10-9 g / ml), but increased the force of the contractions in rats in progesterone dominance (trend) and pregnancy (statistically significant). Against the background of propranolol (10-8 g / mL) or atenolol (10-8, 10-6 g / mL), adrenaline (10-5 g / mL) instead of increasing the force of contraction reduced it (probably due to activation of beta3-, alpha1 - and alpha1 a2- adrenergic receptors), and histidine (10-4 g / mL) prevented this reduction, but does not restore full ability of adrenaline to exert a positive inotropic effect. On the background of nicergoline (10-8 g / mL or nicergoline and propranolol (10-8 g / mL), adrenaline (10-5 g / mL) did not alter the force of contraction, and histidine (10-4 g/mL) restore ability of adrenaline to exert a positive inotropic effect but only in the experiments with nicergoline. Concluded that histidine increases the efficiency of the activation of all three (beta1-, beta2- and beta3-) populations of myocardial beta-adrenoceptoprs, including at lower by adrenergic blockers. Therefore, histidine proposed as an antagonist of beta-adrenergic blockers and as resensitizator of these receptors.

Core Tip: In the experiments with strips of the right ventricle of 40 nonpregnant and 20 pregnant rats histidine (10-10-10-4 g /mL) did not increase the response to adrenaline (10-9 g / ml), but increased the force of contractions in pregnant rats. On the background of propranolol (10-8 g / mL) or atenolol (10-8, 10-6 g / mL), adrenaline (10-5g/mL) showed a negative inotropic effect, and histidine (10-4 g / mL) prevented it, but does not restore the ability of adrenaline to show positive inotropic effect,. i.e histidine exhibits the properties of the antagonist of beta-blockers and of resensitizator of beta-adrenoceptors

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Case Report **Published Date:-2018-11-05 00:00:00**

Hyperkalemia: An archenemy in emergency medicine. Description of two case reports

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Potassium is an important ion capable to maintain intra-extracellular electric gradient. Variations in the intra-extracellular ionic flow may alter cells functions, skeletal and smooth muscle contractility and electric activity of myocardial cells.

In this study we demonstrated that high level of serum potassium may be associated with cardiac and neurological life-threatening diseases.

We describe two case reports in which one patient, chronic hemodialysed, presented with cardiogenic shock in setting of hyperkalemia; the other, with end-stage kidney disease, showed a flaccid paralysis associated to high level of serum potassium during potassium sparing diuretic therapy.

Emergency haemodialysis was performed with a complete remission of the clinical manifestations.

Indeed, the use of simply diagnostic instruments such as serum electrolyte assay and electrocardiographic study (ECG) are helpful in clinical practice solving in timely serious complications due to hyperkalemia.

Review Article **Published Date:-2018-10-29 00:00:00**

Endogenous sensitizer of beta-adrenergic receptors (ESBAR) and its analogs (review)

The results of the 20 years studies of the presence in blood serum and other body fluids of endogenous modulators of adrenergic and M-cholinergic impact as a component of humoral link of autonomic nervous system. The article is devoted to the endogenous sensitizer of beta-adrenergic receptor (ESBAR) - water-soluble low molecular weight substances, analogs of which are histidine, tryptophan, tyrosine, mildronat and preductal. It is shown, that separate dilutions of human serum and animal (as a source of ESBAR) and analogs of ESBAR ways to enhance the effectiveness of activation of beta-adrenoceptors (AR) of smooth muscle (uterus, coronary and renal arteries, trachea, stomach), myocardium, erythrocytes and platelets (respectively influenced of histidine and tryptophan). It is reported that content of ESBAR in human serum (according to the titers of its dilution) depends on the sex and the presence of somatic diseases, and at women are also on the stage of reproduction and obstetric complications It is discussed possible mechanisms of ESBAR action, its physiological role, including as a component of beta-adrenoceptor inhibitory mechanism for myometrium, as well as the prospect of the use of analogs of ESBAR, including for the prevention of preterm labor, and for the treatment of bronchial asthma, coronary heart disease, hypertension and heart failure.

Research Article **Published Date:-2018-10-17 00:00:00**

An observational study of the occurrence of anxiety, depression and self-reported quality of life 2 years after myocardial infarction

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Background: Patients with myocardial infarction (MI) often experience anxiety, depression and poor quality of life (QoL) compared with a normative population. Mood disturbances and QoL have been extensively investigated, but only a few studies have examined the long-term effects of MI on these complex phenomena.

Aims: To examine the levels and associated predictors of anxiety, depression, and QoL in patients 2 years after MI.

Methods: This was a single center, observational study of patients with MI (n=377, 22% women, median age 66 years). Two years after MI (2012-2014), the patients were asked to answer the Hospital Anxiety and Depression Scale (HADS) and EuroQol 5-dimension (EQ-5D-3L) questionnaires.

Results: Most patients experienced neither anxiety (87%, 95% confidence interval [CI]: 83-90%) nor depression (94%, 95% CI: 92-97%) 2 years post-MI. Elderly patients experienced more depression than younger patients (p=0.003) and women had higher anxiety levels than men (p=0.009).

Most patients had “no problems” with any of the EQ-5D-3L dimensions (72-98%), but 48% (95% CI: 43%-53%) self-reported at least “some problems” with pain/discomfort. In a multiple logistic regression model (EQ-5D-3L) higher age (p<0.001) and female sex (p<0.001) were associated with more pain/discomfort. Female sex (p=0.047) and prior MI (p=0.038) were associated with anxiety/depression. History of heart failure was associated with worse mobility (p=0.005) and problems with usual activities (p=0.006). The median total health status of the patients (EQ-VAS) was 78 (95% CI: 75-80)

Opinion **Published Date:-2018-10-11 00:00:00**

Use of Rivaroxaban and Apixaban, Two Non-Vitamin K Antagonist Oral Anticoagulants (NOACs), in Renally Impaired Patients - the limits of our knowledge

Patients with chronic kidney disease are at increased risk of thromboembolic complications and are therefore often managed with anticoagulation therapy [1]. While these patients are traditionally treated with Vitamin K antagonists (VKAs), the Non-Vitamin K antagonist oral anticoagulants (NOACs), such as rivaroxaban and apixaban are being used with increasing frequency. Relatively new to the anticoagulant treatment arsenal, both compounds are direct Factor Xa inhibitors and represent an alternative to traditional VKA treatments, such as warfarin. However, because these compounds are at least partially renally eliminated, achieving safe and effective anticoagulation in this vulnerable population has proven to be a challenge [2,3]. With limited published data, there is often uncertainty surrounding which of the NOACs can be safely used.