FIRST EXPERIENCE OF NEW EUROPEAN RECOMMENDATIONS ON PERIOPERATIVE MANAGEMENT OF PATIENTS WITH CONCOMITANT CARDIOVASCULAR PATHOLOGY IN NON-CARDIAC SURGERY

Gritsan A., Ishutin V., Mitsukov D., Schneider V., Novokreshchennykh V., Smirnova V.
Krasnoyarsk State Medical University, Krasnoyarsk Clinical Regional Hospital, Russian Federation

We urgently need a global and possibly universal system of cardiac risk stratification, which would take into account the whole variety of existing cardiovascular disorders, methods of diagnostics and treatment, and would give an anesthesiologist a distinct algorithm when working with this category of patients.

• **OBJECTIVE:** In clinic practice to assess the convenience and efficiency of the most important and updated regulations of the new guidelines proposed by ESA/ESC at patients with high cardiac risk undergoing traumatic operations in thoracic surgery, as well as the frequency and structure of perioperative cardiovascular complications and long-term outcomes due to their application.

We observed a group of 20 patients from the Thoracic Surgery Department	Preoperative tactics of examination						Additional, «thorough» study methods
Type of anesthesia: Combined endotracheal anesthesia based on sevorane (1,0-1,5 MAC, O2 1,0-1,5 l/min) and fentanyl (3,0-4,0 µg/kg per hour) with separate artificial lung ventilation in combination with prolonged epidural (EDA) or intrapleural (IPA) analgesia with 0,2% solution of naropin. Type of surgery: “Standard” lobectomy via thoracotomy.	<div>- The standard set of clinical-laboratory and instrumental studies + 12-leads ECG + echocardiography + consultation with cardiologist (arrhythmologist, cardiac surgeon);</div> <div>- Assessment of surgical risk based on the planned volume of surgical intervention;</div> <div>- Assessment of complication risk in the CVS (Modified Lee Index);</div> <div>- Calculation of metabolic equivalent intensity (MET);</div> <div>- Initial level of Troponin I (Tr I).</div>						<div>- BEM – 5 patients (25%);</div> <div>- HM – 6 patients (30%);</div> <div>- BEM + HM – 3 patients (15%);</div> <div>- CAG/CAP – 2 patients (10%)</div> <div>↓</div> <div>DAPT with a 6 weeks delay of the operation.</div>
In the intra- and postoperative period we assessed	Characteristics of the intraoperative period (Surgical Apgar Score)						Baseline characteristics of patients
<div>- Incidence of arterial hypotension (↓MAP at 20% or ↓MAP ↓60 mmHg for 30 minutes or more);</div> <div>- Severity of intraoperative period according to the SURGICAL APGAR SCORE in points;</div> <div>- Complications in the CVS: AMI, paroxysmal rhythm disorders, CVA, PE and 30-day mortality caused by them;</div> <div>- Tr I in 24, 48 and 72 hours;</div> <div>- Intensity of pain in points according to the VAS.</div>	Index, points	0	1	2	3	4	<div>- Surgical risk: high (> 5%);</div> <div>- Modified Lee Index: 3,3 ± 0,4;</div> <div>- MET: 4,8 ± 0,7;</div> <div>- Tr I: 0,25 ± 0,05 ng/ml;</div> <div>- VAS: 0 points (before the surgical operation).</div>
	Blood loss, ml	> 1000	601-1000	101-600	≤100	-	
	The lowest MAP, mmHg	< 40	40-54	55-69	≥ 70	-	
	The lowest HR	> 85	76-85	66-75	56-65	≤ 55	

Characteristic of preoperative drug therapy	
12 patients – statins (60%)	All 20 patients – statins (100%)
12 patients – BAB (60%)	5 patients more – first appointment (25%) In 3 patients – unchanged dose (25%) In 9 patients previously treated – the dose was changed (75%)
14 patients – ACE inhibitors (70%)	6 patients more – first appointment (30%) In 7 patients – unchanged dose (50%) In 7 patients previously treated – the dose was changed (50%)

Characteristics of intraoperative and postoperative period (1)			Characteristics of intraoperative and postoperative period (2)		
1. Arterial hypotension: 4 patients (20%)	3 patients (15%) blood loss > 1,0 л	Infusion and transfusion therapy norepinephrine 0,1 - 0,2 µg/kg/min	4. Tr I: 0,73 ± 0,08 after 24 hours 0,65 ± 0,06 after 48 hours 0,58 ± 0,05 after 72 hours	These indicators were significantly higher than the original preoperative level, but at the same time they did not significantly exceed the upper normal limit, decreased in the dynamics and were not accompanied by other clinical, ECG, EchoCG and laboratory signs of myocardial damage. The most likely causes of their development can be mechanical compression of the myocardium, as well as electrocoagulation of chest wall tissues and the lung in close proximity to heart.	
	1 patient (5%) paroxysmal AF	Cordarone 450 mg + infusion of glucose-potassium mixture with insulin			
2. Surgical Apgar Score: all 20 patients less than 7 points (100%)	Transfer to the Intensive Care Unit (ICU) 8 patients for respiratory support (40%)		5. During the month:	1 patient – AMI in 18 days (5%)	
				1 patient – PE in 25 days (5%)	
3. VAS: EDA – 16 patients (80%) IPA – 4 patients (20%)	All the patients achieved the target level of analgesia both at rest (≤ 3 points on the VAS), and during deep breathing and cough (≤4 points on the VAS).		6. 30-day mortality: 5%	This indicator corresponds to the category of high-risk surgical patients who scored 3 or more points according to the Lee Index Scale, and it is not significantly different from the European average level.	

Guidelines proposed by ESA/ESC are effective, relatively simple and convenient in the clinic practice, allowing an anesthesiologist to choose tactics of the perioperative management of patients with cardiovascular pathology in non-cardiac surgery and this increases a safety level and leads to better treatment outcomes.