The effect of laryngoscopy and intubation on the qNOX and qCON in spinal surgery

Gritsan A., Dovbysh N., Korchagin E., Chernetsky O.

Krasnoyarsk Regional Clinical Hospital, Krasnoyarsk

State Medical University, Krasnoyarsk, Russian Federation

During the past 10 years there have been several analgesia monitors, which can be divided according to the principle of action into 2 groups

Registration and analysis of brain signals
- electroencephalography (EEG) and
auditory evoked potentials (AEP)

The acquisition parameters of the
autonomic nervous.

Register of qNOX based on the principle of adaptive network based fuzzy inference system.

Goal of study: To evaluate the information value of the qNOX and qCON on stressful effect of laryngoscopy and intubation

Materials and methods: data was recorded from **12 patient** – 8 men and 4 women, age 40.6 ± 9.6 (I-II class according ASA), who were spinal surgery. Surgical intervention took place under general anesthesia. Induction was carried out on the basis of propofol 2.8 ± 0.7 mg/kg and fentanyl 2.5 ± 0.4 μ g/kg, maintenance - on the basis of sevoflurane 0.7 to 1.1 MAC and fentanyl 1.8 ± 0.3 μ g/kg. Before and after laryngoscopy and intubation were evaluated hemodynamic parameters (monitor Phillips MP 20): SP, DP, MAP, HR, assessment of the qNOX and qCON (monitor ICARDQ Chirana); the presence of go and the lack of motor response to laryngoscopy and intubation. The level of qCON and qNOX was considered adequately in the range of 40-60. Statistical analysis was performed using the t-test for dependent samples, considering a statistically significant change in p value < 0.05 .

Results and discussion: the values of the qNOX and qCON decreased to the target values 43.6 ± 15.4 and 44.4 ± 9.5 respectively after administration of propofol and fentanyl before conducting laryngoscopy and intubation (see table).

	HR, $b \cdot \min^{-1}$	SP, mmHg	DP, mmHg	MAP, mmHg	qCON	qNOX
before laryngoscopy and intubation	89.8 ± 15.6	$123 \pm 23,4$	76.1 ± 15.6	91.7 ± 16.3	44.4 ± 9.5	43.6 ± 15.4
after laryngoscopy and intubation	73.6 ± 18.4	93.4 ± 18.1	56.3 ± 14.7	68.7 ± 14.7	46.4 ± 17.6	37.8 ± 20.1
	$p < 0.05$	$p < 0.05$	$p < 0.05$	$p < 0.05$	$p = 0.2$	$p = 0.15$

Laryngoscopy and intubation did not cause pressor hemodynamics reactions and even there were statistically significant decrease of the estimated hemodynamic parameters, which can be attributed to the relative hypovolemia and the patients are on his side, when non-invasive BP was measured on the raised hand.

Statistically significant changes qNOX and qCON after laryngoscopy and intubation did not happen.

Conclusion: Focus on the values of the qNOX and qCON allows to prevent the decreased of the flow of inhaled anesthetics in the future maintenance of anesthesia.