

**RELEVANCE OF VENTILATION IN PREGNANT WOMEN WITH CHRONIC NON-SPECIFIC LUNG DISEASES**

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**Abstract:** In recent years, there has been a trend towards an increase in the abdominal method of delivery, the optimal level of which is considered to be approximately 10%-12% of the total number of births. Abdominal delivery was performed in 36 women with chronic nonspecific pulmonary diseases (CNPД) aged 19 to 39 years. Regional anesthesia with non-invasive ventilation was used as an anesthetic aid. The effectiveness of non-invasive pulmonary ventilation (NIV) in CNPD has been shown, with improvements in respiratory support and cardiac activity noted. NIV is inexpensive and well tolerated by patients.

**Keywords:** Pregnant, non-invasive ventilation, method, non-specific lung disease.

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**INTRODUCTION**

Among delivery operations, abdominal caesarean section occupies one of the leading places. Thanks to the improvement of surgical techniques, anesthesia, and tactics for managing the postoperative period, cesarean section (CS) has become a reserve for reducing perinatal mortality, especially among high-risk pregnant women. These are primarily patients with chronic nonspecific diseases of the bronchopulmonary system. Chronic nonspecific pulmonary diseases (CNPД) are a group of the most common diseases in pregnant women and one of the main causes of maternal mortality [1].

**MATERIALS AND METHODS**

Pregnancy can worsen CNPD in many patients. In turn, the latter often complicates the course of pregnancy and also adversely affects the intrauterine development of the fetus. In this connection, the question of the advisability of prolonging pregnancy, determining the timing and methods of delivery, and the choice of anesthesia should be decided strictly individually, depending on the nature of the pulmonary pathology, the functional state of the respiratory system and its reserve capabilities [4].

In total, combined anesthesia with NIV was used in 36 pregnant women aged 19 to 39 years with a gestation period of 28-36 weeks. All patients were divided into 2 groups: the main group, 18 patients, who underwent regional anesthesia with the use of non-invasive ventilation during the period of abdominal delivery, and the control group, 18 patients, who underwent regional anesthesia with spontaneous breathing during the period of delivery. All patients had respiratory failure (RF) of I-II degree, sharply reduced respiratory reserves, which were assessed using a spirometer and a breath-hold test.

In recent years, NIV has been widely used in anesthesiological practice in connection with the prevention of "mechanical" and infectious complications associated with intubation, preservation of the natural protective mechanisms of the upper respiratory tract, physiological cough, preservation of the patient's ability to talk, swallow, eat, cough up sputum, and also by increasing comfort for the patient, reducing the need for muscle relaxants and tranquilizers, and quick and safe weaning from the respirator [3].

## **RESULTS AND DISCUSSION**

At the 1st stage, in pregnant women of group I, the respiratory rate was  $23.7 \pm 1.8$ , heart rate  $94.3 \pm 1.2$  beats per minute, SBP  $109.6 \pm 1.6$  mmHg, FEV1  $38.5 \pm 0.7\%$ , SpO2  $91.3 \pm 0.8\%$ . In pregnant women of group II: respiratory rate was  $23.6 \pm 1.6$ , heart rate  $96.8 \pm 1.3$  beats per minute, SBP  $108.9 \pm 1.7$  mmHg, FEV  $37.4 \pm 0.8\%$ , SpO2  $90.2 \pm 0.5\%$ .

At the 2nd stage, in pregnant women of group I, a positive change in the hemodynamic type was observed: respiratory rate was  $24.3 \pm 1.2$ , heart rate  $96.6 \pm 1.2$  beats per minute, SBP  $90.7 \pm 2.3$  mmHg, FEV  $45.3 \pm 0.8\%$ , SpO2  $93.8 \pm 0.8\%$ . In group II, the same indicators were: respiratory rate  $24.6 \pm 1.1$ , heart rate  $98.6 \pm 1.7$  beats per minute, SBP  $98.6 \pm 1.9$  mmHg, FEV  $39.1 \pm 0.5\%$ , SpO2  $91.4 \pm 0.7\%$ .

At the most traumatic 4th stage of the study - after extraction of the fetus, in pregnant women of group I the respiratory rate was  $19.8 \pm 1.1$ , heart rate was  $86.4 \pm 1.3$  beats per minute, SBP was  $92.8 \pm 1.4$  mmHg, FEV  $66.4 \pm 1.8\%$ , SpO2  $98.2 \pm 0.6\%$ . In group II, the same indicators were: respiratory rate  $20.3 \pm 1.6$ , heart rate  $90.2 \pm 1.5$  beats per minute, SBP  $102.3 \pm 1.6$  mmHg, FEV  $59.5 \pm 0.7\%$ , SpO2  $94.5 \pm 0.8\%$ .

The studied hemodynamic parameters in pregnant women of group I remained stable at the 5th stage of the study. Also, in pregnant women of group I, there was a decrease in respiratory rate to physiological values with a simultaneous increase in FEV and blood oxygen saturation and an improvement in general well-being. In pregnant women of group II, the severity of clinical manifestations decreased slightly.

The studied parameters differed significantly from the initial preoperative values. A clear trend towards a decrease in respiratory rate to physiological values was recorded with a simultaneous increase in FEV and blood oxygen saturation. The course of the immediate postoperative period was smooth. Noteworthy was the disappearance of shortness of breath and the absence of the need for intubation with prolonged mechanical ventilation.

## **CONCLUSION**

Non-invasive ventilation is becoming an important tool for providing respiratory support in intensive care settings. To implement this method into practice, not only appropriate equipment is required, but also experienced, trained personnel. It has been proven that in a certain category of patients, NIV allows one to avoid tracheal intubation and traditional mechanical ventilation and helps reduce the risk of complications and mortality. Thus, our experience with NIV suggests that it is highly effective and safe. The results obtained allow us to recommend combined anesthesia with NIV to ensure abdominal delivery in pregnant women with CNPD and low respiratory reserves.

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