

7. Kongres Hrvatskog
torakalnog društva

7th Congress of Croatian
Thoracic Society

TORAKS

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26. - 29. TRAVANJ / APRIL



NIV

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JO1 Odjel za opstruktivne bolesti

Background: NIV - non-invasive mechanical ventilation is a breathing support through various interfaces, by applying positive pressure to the breathing system of patients, thus avoiding frequent and serious complications of the invasive mechanical ventilation. Greatest benefits are found in patients with cardiogenic pulmonary edema and exacerbation of COPD, in immunocompromised patients with rapid extubation and after unsuccessful spontaneous breathing attempts. Using NIV in the treatment of the acute respiratory failure (ARF) within the deterioration of COPD, reducing the partial pressure of carbon dioxide in the arterial blood (PaCO₂) and improving the alveolar ventilation, which results in an improvement of the pH.. By the standards of the Global Initiative for COPD (GOLD), indications for NIV are:

- Moderate to severe dyspnea using the accessory respiratory muscles and paradoxical movements of the abdomen
- Moderate to severe acidosis with a pH of 7.35- 7.30 and / or hypercapnia with a PaCO₂ of 45-60 mmHg • respiratory rate greater than 25 / min

Case report: The benefit of NIV in the treatment of an acute exacerbation of COPD in case of severe decompensated global respiratory failure. This is a patient with a long-term COPD (GOLD III), comorbidity surgically treated primary malignant lung disease (lobectomy because of a squamous cell lung cancer (stage IIB) years ago, with known coronary disease, previously implanted stent in the coronary blood vessels. On arrival in the emergency the values of the gas analysis of arterial blood were as follows: pH 7.17 pCO₂ 84 mmHg pO₂ of 45 mmHg SO₂ 67% with elevated troponin and slightly elevated inflammatory parameters, radiological absence of pneumonia or signs of recurrence of lung malignancy. Upon receipt on the ward started the NIV by gradually adjusting EPAP and IPAP. Among other parenteral and inhalant therapy after 10 hours there is a satisfactory value of oxygen saturation (SO₂ 94%), after further 10 hours there is a satisfactory correction of the entire acid-base

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system; ph 7:36 pCO₂ 69 mmHg pO₂ 85mmHg SO₂ 96 % .Continuing hospitalization, after respiratory stabilization, the patient is made and coronary angiography which is excluded acute coronary stay.

Conclusion: After 20 hours NIV treatment and other medicaments, there was a full normalization of the respiratory gas and acid-base status (significantly decreased partial pressure of carbon dioxide, increased pH, decreased respiration), which confirms the unquestionable advantage of NIV. This avoids the frequent periprocedural complications such as sinusitis, respiratory pneumonia, tracheal stenosis, tracheo-oesophageal and tracheo-vascular fistula, pneumothorax, hypotension, pulmonary injury caused by ventilation.

Literature: Noninvasive ventilation in chronic obstructive pulmonary disease patients
Gordana Pavliša, Taida Alfirević-Ungarov, Eugenija Kasap - Med Jad 2011;41(3-4):135-141