Terapija visokim protokom kisika putem nazalne kanile kod kardiokirurških pacijenta s kroničnom opstruktivnom plućnom bolesti

Nasal high flow oxygen therapy in patient with chronic obstructive pulmonary disease following cardiac surgery

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KEYWORDS: heart surgery, chronic obstructive pulmonary disease, high flow oxygen therapy, nasal cannula, respiratory physiotherapy.

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Uvod: Kronična opstruktivna plućna bolest (KOPB) razvija se i napreduje godinama. Obilježena produktivnim kašljem, dispnejom, hipoksemijom i hiperkapnijom predstavlja veliki rizik za nastanak postoperativnih plućnih komplikacija kod pacijenta podvrgnutim operacijama na srcu.^{1,2} Povratak pacijenta na endotrahealni tubus nije poželjan izbor, stoga su respiratorni fizioterapijski postupci i invazivna ventilacija u bilo kojem obliku daleko bolja metoda.³ Cilj rada bio je prikazati rezultate djelovanja kombinacije ranih respiratornih fizioterapijskih postupaka i terapije visokim protokom kisika putem AIRVO 2 uređaja i nazalne kanile kod pacijenta s razvijenim plućnim komplikacijama nakon operacije na srcu.

Prikaz slučaja: U radu je prikazan primjer liječenja pacijenta koji je imao klinički evidentirano akutno pogoršanje KOPB-a, nakon operacije na srcu. Razvio se respiratorni distres, hipoksemija, srednja do teža hiperkapnija. Kod takvih bolesnika, uz ranu respiratornu fizioterapiju, neinvazivna ventilacija (NIV) postala je poželjan primarni modalitet za respiratornu potporu, što povećava udisajni volumen i održava odgovarajuću alveolarnu ventilaciju, ispire ugljični dioksid, smanjuje dišni rad te eliminira većinu anatomskog mrtvog prostora. Kao izbor oblika NIV-a koristio se noviji oblik respiratorne potpore preko relativno novijeg uređaja AIRVO 2. Uspoređivani su parametri SpO_2 te plinovi O_2 i CO_2 iz arterijske krvi prije početka terapije te nakon nekoliko sati. Zagrijani, ovlaženi zrak s povećanim visokim protokom kisika preko nazalne kanile doveo je do znatno boljeg i bržeg oporavka spomenutog pacijenta.

Zaključak: Bolesnik je nakon nekoliko dana tretiran ovim načinom liječenja otpušten kući, kardiorespiratorno stabilan sa znatno boljim plućnim i hemodinamskim parametrima. Uspješnost prikazanoga oporavka zasigurno treba pripisati provođenju adekvatno prilagođene terapije visokim protokom kisika preko nazalne kanile uz rane respiratorne fizioterapijske postupke.

Introduction: Chronic obstructive pulmonary disease (COPD) develops and progresses over the years. Disease characterized by productive cough, dyspnea, hypoxemia and hypercapnia presents a high risk of development of postoperative pulmonary complications in patients after cardiac surgery.^{1,2} Repeated endotracheal intubation is neither good nor desirable option therefore physiotherapy respiratory treatment and non-invasive ventilation (NIV) in any form is strongly recommended.³ **Objective:** To show effectiveness of high flow oxygen therapy using physiotherapy respiratory treatment and AIRVOTM 2 device with nasal cannula in patient with poorly managed COPD who developed postoperative pulmonary complications after cardiac surgery.

Case report: This case report presents an example of twenty days treating a patient who had clinically documented acute exacerbation of COPD following cardiac surgery. Respiratory distress, hypoxemia and moderate to severe hypercapnia were developed. In similar patients, along with early respiratory physiotherapy, NIV has become preferred modality of respiratory support because it increases tidal volume, maintains adequate alveolar ventilation, washes out carbon dioxide, reduces the work of breathing and eliminates majority of anatomical dead space. Chosen form of NIV is relatively new method of respiratory support using AIRVOTM 2 device. SpO_2 and gasses O_2 and CO_2 from arterial blood parameter were compared before starting therapy and after few hours. High flows of heated and humidified mixture of air and oxygen delivered through nasal cannula resulted in significantly better and faster recovery of above mentioned patient.

Conclusion: After several days of treatment with this method, patient was discharged home in stable cardiorespiratory condition with significant improvements in pulmonary and hemodynamic parameters. Implementation of adequately titrated high flow oxygen therapy with early respiratory physiotherapy treatment played an important role in successful recovery.

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