

# New arguments for NIV efficacy in the treatment of acute respiratory failure from the ovarian hyperstimulation syndrome

**Keywords:** non-invasive ventilation ; ovarian hyperstimulation syndrome ; acute respiratory failure

## Dear Editor

We have read with great interest this original observation of two women aged 42 and respectively 38, who presented to the Emergency Department presenting rapid weight gain, abdominal distension, dry cough and increasing dyspnea following the 11-day in-vitro fertilization protocol.

The ovarian hyperstimulation syndrome (OHSS) was described as a rare complication of assisted reproductive techniques (ART), potentially resulting in severe cases of hypoxemic acute respiratory failure (ARF)<sup>1</sup>. The underlying mechanism is increased vascular permeability leading to a massive fluid shift from the intravascular to the extravascular compartment, intravascular hypovolemia, hypotension, reduced cardiac output, edema, ascites and hydrothorax<sup>2</sup>.

Both patients were treated with non-invasive ventilation (NIV) for clinical and arterial blood gas signs of respiratory failure. We consider that in these ARF cases, NIV added a great contribution to avoid endotracheal intubation and its complications. NIV is considered as the first-line intervention in acute respiratory distress syndrome that improves gas exchange, reduces the use of sedation drugs, prevents ventilator-associated pneumonia and lowers intensive care unit mortality rate<sup>3</sup>. The respiratory improvement is due to the recruitment of collapsed alveoli, the increase of forced residual capacity (FRC) and the redistribution of the extravascular fluid.

In pregnancy, NIV is often avoided due to the risk of aspiration caused by the increased abdominal pressure and the lower esophagus sphincter tone<sup>4</sup>.

The data from literature have shown several case reports and small series with favourable outcomes from NIV used for hypoxemic ARF in pregnancy. The etiologies range from pulmonary edema associated with tocolytic agents to severe preeclampsia or aspiration pneumonia<sup>3</sup>.

As the available data in this domain are scarce, the two severe ARF cases described by the authors provide new arguments in favor of NIV utility in the multidisciplinary

approach of OHSS patients. As a recent review emphasizes, the favorable outcomes of NIV therapy in pregnant patients are conditioned by an early OHSS diagnosis and the necessary experience of the medical team. NIV appears to be an option for alert, not sedated, and cooperative patients<sup>4</sup>.

As a mention to the authors, information concerning the pregnancy outcomes in the presented cases would have been useful.

Finally we consider that even if several reports demonstrated the NIV efficacy in treating hypoxemic acute respiratory failure due to OHSS, further clinical studies are needed to define the potential implications and interactions of NIV in is form of ARF.

## Authors declare no conflict of interest

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