

Effect Of Non-Invasive Ventilation on the Treatment Process of Pregnant Mothers with Acute Respiratory Distress Syndrome: A Systematic Review

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ABSTRACT

Introduction: Acute respiratory distress syndrome (ARDS) is a sudden respiratory insufficiency secondary to widespread inflammatory lung damage accompanied by pulmonary edema of non-cardiac origin. Non-invasive ventilation (NIV) is a suitable respiratory support method with fewer side effects than invasive ventilation, which can be a better alternative for indicated patients, especially pregnant mothers with ARDS. This study aimed to investigate the latest achievements in using NIV on the recovery of pregnant mothers with ARDS.

Search strategy: Following the PRISMA guideline, a comprehensive search was conducted across PubMed, Scopus, ScienceDirect, SID, Magiran, and IranDoc databases from 2015 to 2023. The search utilized keywords such as "acute respiratory distress syndrome," "pregnancy," and "non-invasive ventilation", alongside their Persian equivalents. A total of 810 articles were identified, from which 14 studies met the inclusion criteria. These studies examined pregnant women over 18 years of age with ARDS, published articles, and studies did not involve cases of abortion or ectopic pregnancy. Duplicate studies were removed, and the final selection was made, with the search date being May 1, 2024.

Result: Among the 14 reviewed studies, eight indicated that although NIV increases the risk of delayed intubation, it can effectively improve ARDS. NIV is effective in reducing hypoxia, as well as the risks of fetal death and premature delivery. However, four studies suggested that the use of NIV independently led to increased intensive care unit hospitalization and higher maternal and child mortality following treatment failure. Additionally, two articles emphasized the need for further research, highlighting that the data must be more comprehensive to draw definitive conclusions.

Conclusion and Discussion: In pregnant women with ARDS, NIV effectively manages hypoxia and reduces maternal and fetal mortality. Moreover, NIV is a suitable option for conscious pregnant women because it minimizes ventilatory complications. However, it is less effective for severe and moderate ARDS compared to mild cases, indicating the need for further study in the management of severe and moderate ARDS in pregnant women.

Citation:

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