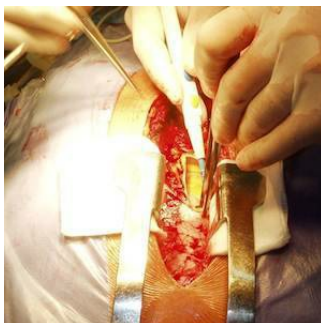


NIV After Cardiothoracic Surgery Reviewed



A systematic review and meta-analysis of 14 randomised controlled trials (RCTs), including 1740 patients, that compared noninvasive ventilation (NIV) with usual care after cardiothoracic surgery found minimal effect overall of NIV on mortality risk, endotracheal intubation, respiratory, cardiovascular and other complications, respiratory rate, heart rate, PaO₂/FiO₂ ratio, PaCO₂, systolic pressure, length of ICU and hospital stay. Sensitivity analysis showed that NIV was associated with higher levels of PaO₂/FiO₂ ratio and lower risk of endotracheal intubation, with no significant effect on the risk of other outcomes.

The authors note that the subgroup analyses showed that NIV played an important role in multiple outcomes in specific subpopulations of patients. However, the limitations noted are the poor quality trials included in the analysis as well as heterogeneity in every study. Most trials were underpowered to detect potential clinical differences in endotracheal mechanical ventilation as they were designed with efficacy of NIV as a primary endpoint. The small number of trials included precluded evaluation of the effect of NIV duration on treatment outcomes.

See Also: [High-Flow Nasal Cannula Noninferior to NIV for Preventing Respiratory Failure and Reintubation](#)

The authors suggest that NIV's role as a preventive tool remains unclear and is probably limited to high-risk patients. They conclude: "These efficacy and safety findings need further investigation by stratification of potential confounding factors. The summary results for renal complication, other complications, respiratory rate, heart rate, and systolic pressure should be further studied since few trials reported these treatment effects and adverse events." They add: "These results might help to better define the efficacy and safety of NIV in patients after cardiac or thoracic surgery, and enable the selection of appropriate treatment strategies."

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