[5] Zhan Q, Sun B, Liang L, Yan X, Zhang L, Yang J, et al. Early use of noninvasive positive pressure ventilation for acute lung injury: a multicenter randomized controlled trial. Crit Care Med 2012;40(2):455–60.
[6] Gray A, Goodacre S, Newby DE, Masson M, Sampson F, Nicholl J. Noninvasive ventilation in acute cardiogenic pulmonary edema. N Engl J Med 2008;359(2):142–51.

Noninvasive ventilation in acute hypoxemic respiratory failure: A systematic review and meta-analysis. Response to letter

To the Editor,

We agree with Sehgal et al. that it is important to design a comprehensive search strategy for several important database in order performing a systematic review of the literature. It is also crucial to followa predefined selection criteria for including primary studies. Therefore cursory searches can be misleading without a proper protocol and a clear research question. Our systematic review was conducted according to the PRISMA [1]. After working in pairs of independent reviewers and consulting a third independent reviewer whenever consensus was not reached we presented the final nine studies that met our selection criteria. Sehgal et al. mentioned five studies that were potentially missed by our systematic review that aimed to analyze available evidence of noninvasive ventilation (Bi-level positive airway pressure- BiPAP modality) in hypoxemic acute respiratory failure, excluding chronic obstructive pulmonary disease as mentioned in our abstract [2]. The studies mentioned by Sehgal et al. did not meet our inclusion criteria and the reasons are described below.

Gray et al. published a very important trial for the use of NIV in acute pulmonary edema [3]. This trial was considered in our analysis however all three groups included patients with significant hypercapnia. Also, in the inclusion criteria, there is no mention for hypoxia (only tachypnea and pH < 7,35), also showed in their Table 1, in the pO2 parameters. According to our predefined protocol, we looked at studies reporting hypoxia as a major inclusion criteria [2]. That is also the reason why this study [3] was excluded from our systematic review.

After reading Delclaux et al. [4] and Squadrone et al. [5] it is clear from the abstract that the noninvasive ventilation modality chosen was not CPAP and rather BiPAP. As we mentioned early in our review, studies that reported only CPAP were excluded from our analysis.

Antonelli et al. [6] and Zhan et al. [7] showed positive results in reduction of mortality and intubation by performing a study that compares NIV with oxygen therapy delivered by Venturi mask in hypoxemic patients after solid organ transplantation and acute lung injury, respectively. Our independent reviewers agreed that in both studies the population was heterogeneous, describing pneumonia, pulmonary edema, acute respiratory distress syndrome, pulmonary embolism, trauma as causes of acute respiratory failure.

We believe that due to space restriction, the lack of detailed description of our inclusion criteria lead to misinterpretation of our research question and we appreciate the methodological discussion.

Paula G. David-João
Murilo H. Guedes
Pontifícia Universidade Católica do Paraná, Curitiba, Paraná, Brazil

Alvaro Réa-Neto
Universidade Federal do Paraná, Curitiba, Paraná, Brazil

Viviane B. de Oliveira Chaiben
Pontifícia Universidade Católica do Paraná, Curitiba, Paraná, Brazil

Cristina P. Baena
Pontifícia Universidade Católica do Paraná, Curitiba, Paraná, Brazil
CEPI – Centro de Ensino Pesquisa e Inovação -Hospital Marcelino Champagnat, Curitiba, Brazil
Corresponding author at: School of Medicine, Pontifícia Universidade Católica do Paraná, P.O.Box 80215-901, 1155, Curitiba, Brazil.
E-mail address: cristina.baena@pucpr.br.

26 November 2018

https://doi.org/10.1016/j.jcrc.2018.11.035

References

[1] Ann Intern Med 2009;151(4):264–9. https://doi.org/10.7326/0003-4819-151-4-200908180-00135.
[2] David-Joao PG, Guedes MH, Rea-Neto A, Chaiben VBO, Baena CP. Noninvasive ventilation in acute hypoxemic respiratory failure: a systematic review and metaanalysis. J Crit Care 2018;49:84–91.
[3] Gray A, Goodacre S, Newby DE, Masson M, Sampson F, Nicholl J. Noninvasive ventilation in acute cardiogenic pulmonary edema. N Engl J Med 2008;359(2):142–51.
[4] Delclaux C, L'Her E, Alberti C, Mancebo J, Abroug F, Conti G, et al. Treatment of acute hypoxemic nonhypercapnic respiratory insufficiency with continuous positive airway pressure delivered by a face mask: a randomized controlled trial. JAMA 2000;284(18):2352–60.
[5] Squadrone V, Massaia M, Bruno B, Marmont F, Falda M, Bagna C, et al. Early CPAP prevents evolution of acute lung injury in patients with hematologic malignancy. Intensive Care Med 2010;36(10):1666–74.
[6] Antonelli M, Conti G, Bufi M, Costa MG, Lappa A, Rocco M, et al. Noninvasive ventilation for treatment of acute respiratory failure in patients undergoing solid organ transplantation: a randomized trial. JAMA 2000;283(2):235–41.
[7] Zhan Q, Sun B, Liang L, Yan X, Zhang L, Yang J, et al. Early use of noninvasive positive pressure ventilation for acute lung injury: a multicenter randomized controlled trial. Crit Care Med 2012;40(2):455–60.

DOI of original article: https://doi.org/10.1016/j.jcrc.2018.11.036.