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Response to Jones et al.: Revisiting the benefits of nCPAP versus intubation for severe bronchiolitis

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Dear Editor,

We thank Dr. Jones et al. [1] for their interest in our study [2]. We agree that in such an observational study of two different cohorts of children we have to deal with the selection bias inherent to the non-randomised treatment assignment of the two groups. Several statistical methods allow one to a posteriori minimize the impact of confounding factors inherent to observational studies, multivariate models and propensity score. It is difficult to argue that the propensity score is always more efficient than the multivariate models in accounting for the bias in the estimated treatment effect. There are no well-defined criteria for asserting the superiority of one method over another. A review published in 2006 reported 69 studies where the comparison between the two main methods was feasible and shows that there was a significant difference between the results of the two methods (defined by the authors as >20 %) for only 9 studies (13 %).

The authors therefore concluded that in the majority of cases, the propensity score did not allow more effective control of confounding factors than the conventional multivariate model [3]. Furthermore, it was shown that if the estimation of the effect of treatment performed using the propensity score is correct when it is the rate estimated, it is however biased lower (6–25 %) if the treatment effect is estimated using odds ratio or hazard ratio as was the case in our study [4].

The increase in the number of children treated in the second period is explained by epidemiological data. A steady increase in global acute bronchiolitis was observed in France over the past two decades for both milder forms which do not require intensive care and for severe cases that are admitted to intensive care [5]. This was seen in the Paris region in all hospitals but also in other regions of France. Moreover, this trend was observed in other industrialized countries [6].

As such, the main conclusion of our analysis that “the new global management with the early use of nCPAP is associated with a clear reduction in the treatment invasiveness and complications as well as a significant reduction in the economic burden of severe bronchiolitis” is robust and applicable to most of the patients despite the presence of possible confounders.

Conflicts of interest The authors have no conflict of interest.

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