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LETTERS TO THE EDITOR

Treatment of Acute Asthma

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To the Editor

Wilkinson et al. (1) recently compared racemic albuterol (RAC) 7.5 mg/h to levalbuterol (LEV) 3.75 mg/h in continuous nebulization for the treatment of acute pediatric asthma exacerbations. The trial duration was limited to 2 hours. The LEV group had significantly higher rate of controller medication use (ICS, LTRA, LABA) at baseline suggesting they are likely more severe asthmatics. This could indicate they have more fixed obstruction from advanced disease and are less responsive to therapy. Discharged patients had more severe asthma on presentation. This allows more room for improvement in the racemic group versus the LEV group. No adjustments were made for differences in baseline severity on any endpoints. Patients who could not be consented within 15 minutes or less received RAC 2.5 mg per standing orders. The number of children who received this dose prior to randomization is not reported. This could allow subjects to be more responsive to albuterol and therefore makes identification difficult to interpret. Additionally, it should be pointed out that subjects who received RAC will also have elevations of the S-albuterol isomer, which in some studies has demonstrated blunted response in FEV_1 improvement (2). Another concern is that the drugs were stored in syringes, which is not recommended by the manufacturer of LEV as this increases the possibility of contamination and degradation from prolonged light exposure or temperature extremes. Patients were given ipratropium in the first hour. Analysis of ipratropium used in acute shedding shows that the drug tends to provide a greater benefit to more severe subjects versus mild to moderate subjects. This could allow the racemic group, which were more severe at baseline, to have an advantage in performance compared with the LEV group. The primary efficacy endpoint of this study was the improvement in FEV_1. Only 35.4% ($N = 35$) of subjects could reliably perform spirometry. There is no mention of how many subjects in each group could perform spirometry. Furthermore, the AU rates for the second nebulizer treatment are incorrect. Percentages are based on all intent to treat subjects though only slightly more than half of the subjects required a second nebulizer treatment. Hospital admissions were numerically higher in the RAC group; however, they were not statistically significant. This correlates with prior studies where LEV demonstrated reduced hospital admissions (3). To my knowledge, no studies have shown increases in admissions with LEV. Lastly, the author concludes that, "when the body of literature as a whole is reviewed" LEV does not have any clear advantages over RAC. I do not understand the basis for this conclusion.

DECLARATION OF INTEREST

The author reports no conflicts of interest. The author alone is responsible for the content and writing of the paper.

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