
Late Breaking Abstract - Inhaled corticosteroids to improve lung function in survivors of very preterm birth: PICS1 RCT

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Chronic respiratory inflammation may underpin persistent symptoms and low lung function in childhood survivors of preterm birth. Recent ERS guidelines on the long-term management of bronchopulmonary dysplasia (BPD) identified the use of inhaled corticosteroids (ICS) as a key question, but conditionally recommended against their use based on low certainty of evidence.

Methods: This double-blind randomised controlled trial of fluticasone propionate (125mcg twice daily) included children born <32 weeks gestation, aged 6 to 12 years, not currently on ICS. Participants underwent lung function by spirometry and FeNO, and a modified ISAAC questionnaire pre- and post-randomisation to fluticasone propionate or placebo for 12 weeks. The difference in FEV₁ z-score change between treatment groups was assessed by linear regression. Potential risk factors predicting a clinically significant improvement in FEV₁ (>0.5 z-scores) were assessed by logistic regression.

Results: 176 children were enrolled, of which 122 had acceptable and repeatable FEV₁ at both visits and were included in this analysis. No demographic differences were observed between the placebo (N=61) and treatment groups (N=61) (age, height, weight, BPD status, baseline lung function, symptoms, p>0.05). FEV₁ improved by 0.31 z-scores in the treatment group, compared to placebo (95% CI 0.14, 0.48; p<0.001). 21.3% of those in the treatment arm had a >0.5 improved FEV₁ z-score, which was not predicted by baseline FEV₁ (p=0.70), FeNO (p=0.09), or BPD status.

Conclusion: Fluticasone propionate treatment provides a modest lung function improvement for children born preterm, however further research is required to predict those likely to respond.