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Does treatment guided by exhaled nitric oxide fraction improve outcomes in subgroups of children with asthma?

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Some children with asthma may have better outcomes than others if their treatment is guided by exhaled nitric oxide <http://bit.ly/2VahxJV>

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ABSTRACT

Introduction: Exhaled nitric oxide fraction (F_{ENO}), a biomarker of eosinophilic airway inflammation, may be useful to guide asthma treatment. F_{ENO} -guided treatment may be more effective in certain subgroups for improving asthma outcomes compared to standard treatment.

Methods: An individual patient data analysis was performed using data from seven randomised clinical trials (RCTs) which used F_{ENO} to guide asthma treatment. The incidence of an asthma exacerbation and loss of control, and the time to first exacerbation and loss of control were described between five subgroups of RCT participants.

Results: Data were available in 1112 RCT participants. Among those not treated with leukotriene receptor antagonists (LTRA), but not among those who were treated with LTRA, F_{ENO} -guided treatment was associated with reduced exacerbation risk (OR 0.68, 95% CI 0.49–0.94), longer time to first exacerbation (hazard ratio (HR) 0.76, 95% CI 0.57–0.99) and borderline reduced risk for loss of control (OR 0.70, 95% CI 0.49–1.00). Nonobese children, compared to obese children, were less likely to lose asthma control when treatment was guided by F_{ENO} (OR 0.69, 95% CI 0.48–0.99) and time to loss of control was longer (HR 0.77, 95% CI 0.61–0.99).

Conclusions: Asthma treatment guided by F_{ENO} may be more effective in achieving better asthma outcomes for patients who are not treated with LTRA and who are not obese, compared to standard practice.