



Effect of asthma management with exhaled nitric oxide *versus* usual care on perinatal outcomes

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Asthma pharmacotherapy guided by fractional exhaled nitric oxide and delivered by a nurse or midwife in the antenatal clinic setting did not improve perinatal outcomes and there was no significant difference in asthma exacerbations between groups <https://bit.ly/3LdbJ8V>

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Abstract

Introduction Asthma exacerbations in pregnancy are associated with adverse perinatal outcomes. We aimed to determine whether fractional exhaled nitric oxide (F_{ENO})-based asthma management improves perinatal outcomes compared to usual care.

Methods The Breathing for Life Trial was a multicentre, parallel-group, randomised controlled trial conducted in six hospital antenatal clinics, which compared asthma management guided by F_{ENO} (adjustment of asthma treatment according to exhaled nitric oxide and symptoms each 6–12 weeks) to usual care (no treatment adjustment as part of the trial). The primary outcome was a composite of adverse perinatal events (preterm birth, small for gestational age (SGA), perinatal mortality or neonatal hospitalisation) assessed using hospital records. Secondary outcomes included maternal asthma exacerbations. Concealed random allocation, stratified by study site and self-reported smoking status was used, with blinded outcome assessment and statistical analysis (intention to treat).

Results Pregnant women with current asthma were recruited; 599 to the control group (608 infants) and 601 to the intervention (615 infants). There were no significant group differences for the primary composite perinatal outcome (152 (25.6%) out of 594 control, 177 (29.4%) out of 603 intervention; OR 1.21, 95% CI 0.94–1.56; $p=0.15$), preterm birth (OR 1.14, 95% CI 0.78–1.68), SGA (OR 1.06, 95% CI 0.78–1.68), perinatal mortality (OR 3.62, 95% CI 0.80–16.5), neonatal hospitalisation (OR 1.24, 95% CI 0.89–1.72) or maternal asthma exacerbations requiring hospital admission or emergency department presentation (OR 1.19, 95% CI 0.69–2.05).

Conclusion F_{ENO} -guided asthma pharmacotherapy delivered by a nurse or midwife in the antenatal clinic setting did not improve perinatal outcomes.

