Start, Stop or Continue asthma medication in pregnancy:

Acceptability of a biomarker-based approach to antenatal clinic obstetricians and midwives

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Abstract

Introduction – Maternal asthma is associated with an increased risk of adverse perinatal outcomes including low birth weight and preterm delivery, with exacerbations of asthma increasing these risks further. We have developed a biomarker-based approach for adjusting asthma medication in pregnancy which is the only evidence-based strategy to improve the exacerbation rate in pregnancy. The biomarker (exhaled nitric oxide) assesses eosinophilic lung inflammation and is measured using a simple breath test. It is used to adjust the dose (increase/decrease, start/stop) of inhaled corticosteroids (ICS), while long acting beta agonist (LABA) is added when asthma symptoms remain uncontrolled. The objective of this qualitative study was to assess the feasibility of implementing this biomarker-based management approach in hospital-based antenatal care.

Methods – Semi-structured face-to-face interviews with video elicitation of the approach were conducted with 20 healthcare professionals (15 midwives, 4 obstetricians, 1 General Practitioner) in two tertiary referral hospitals. Qualitative content analysis was used.

Results – Two main themes and 10 sub-themes arose: Getting a number (sub-themes: engaging, technically easy, objective, predictive, reassuring) and Resourcing (sub-themes: time and timing, systems, staff, education and cost). Comments included: "it's easy, fast and effective" and "the main barrier is time". All healthcare professionals felt capable of facilitating the approach with appropriate education, and were willing to undertake it saying "it would be perfectly acceptable for a midwife or doctor to do it".

Discussion – Participants in this study considered the biomarker-based asthma management approach to be a feasible addition to antenatal care following appropriate provision of resources and education.

Objectives

- Asthma effects 13% of pregnant women in Australia
- Poor asthma management increases poor outcomes for mother and infant.
- Fractional exhaled Nitric Oxide (FeNO)-based antenatal asthma management can reduce asthma exacerbations by 50% in pregnant women.
- The acceptability and feasibility of implementing FeNO-based asthma management into antenatal care has not been explored previously from the perspective of health care professionals

Methods

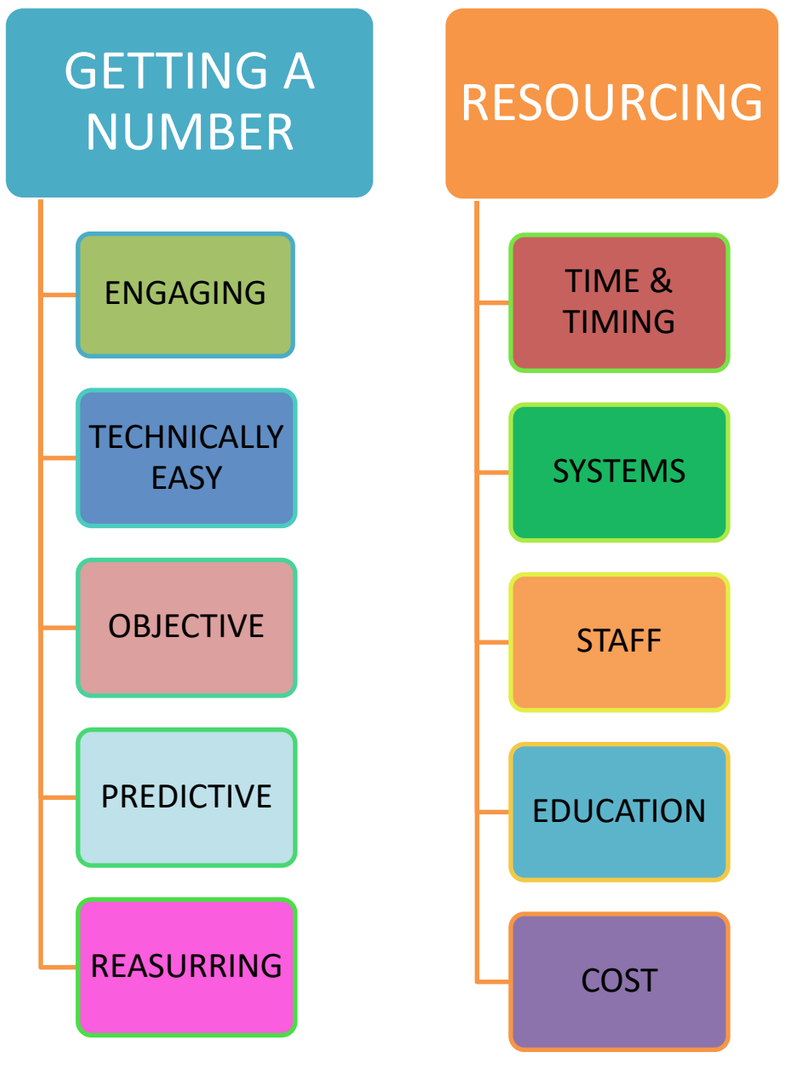
- Qualitative Descriptive Study
- Semi-structured interviews with video elicitation of health care professionals
- Thematic analysis

FeNO is a biomarker of T helper type-2 (T2) eosinophilic airway inflammation. This measurement is collected via a breathing test and can be used to titrate inhaled corticosteroid dose

Results

15 Midwives, 4 Obstetricians, 1 General Practitioner from 2 hospitals were interviewed

Themes and Sub-themes



Results

"I thought it was easy to do, easy to see quick results"

"It would help identify women more closely who are needing adjustment to medication"

"it enables us to ensure that we're optimizing management without increasing the risks of steroids'"

" It needs to be reproduceable in all our models of care"

"This could support women to take care of their own health"

" I like that it's really objective, it's providing guidance and it takes the subjective nature out of it"

" It's not invasive and it does not take long to do"

" My only concern is how it will fit into normal antenatal visits"

Conclusion

- FeNO-based asthma management for pregnant women could be a feasible addition to antenatal care