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Clinical utility of fractional exhaled nitric oxide in severe asthma management

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The optimisation of F_{eNO} testing methods in a variety of clinical settings, as a non-invasive, readily available, and affordable technology, could play an important role in advancing effective asthma control <http://bit.ly/2FN6P3j>

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ABSTRACT Asthma is a chronic inflammatory disease of the airways, affecting over 350 million people worldwide and placing a significant burden on healthcare providers and wider society. Approximately 5–10% of asthma patients are diagnosed with severe asthma and typically are associated with increased risk of hospitalisation from exacerbations, increased morbidity, mortality and higher asthma-associated healthcare costs. Nitric oxide (NO) is an important regulator of immune responses and is a product of inflammation in the airways that is over-produced in asthma. Fractional exhaled NO (F_{eNO}) is predominantly used as a predictor of response to inhaled corticosteroids (ICSs), to monitor adherence and as a diagnostic tool in ICS-naïve patients. In the UK, the National Institute for Health and Care Excellence (NICE) guidelines recommend the use of F_{eNO} for the initial diagnosis of patients with suspected asthma. In the USA, American Thoracic Society (ATS) guidelines recommend F_{eNO} as part of the initial diagnosis of asthma and for monitoring of airway inflammation. F_{eNO} has also been shown to be a predictive factor for asthma exacerbations, with higher levels being associated with a greater number of exacerbations. In addition, higher levels of F_{eNO} have been shown to be associated with a decline in lung function. F_{eNO} testing is a cost-effective procedure and has been shown to improve patient management when combined with standard assessment methods. Recent evidence suggests that F_{eNO} may also be useful as a surrogate biomarker for the assessment and management of severe asthma and to predict responsiveness to some biological therapies.