



Review of Nasal Nitric Oxide and Sinonasal Disease

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Objectives:

To review the literature on nitric oxide as a biomarker for sinonasal disease and examine its utility within current clinical practice.

Materials and Methods:

A literature review was performed using the PubMed database. MeSH terms “Nitric Oxide” and “Sinusitis” were used. Studies were included if they were published in English, involved clinical medicine and were available online for critical review. Studies were excluded if they were irrelevant to topic or the full text was not available.

Results:

94 articles were identified, 8 were excluded due to text availability in English. The articles were reviewed and summarized. Both nasal nitric oxide (NNO) and fractionated exhaled nitric oxide (FeNO) articles were included. Most data suggests that NNO has the most utility as a biomarker for sinonasal disease. NNO is increased in allergic rhinitis and paradoxically decreased in chronic sinusitis (CRS). CRS patients who undergo endoscopic sinus surgery show an increase in NNO. FeNO has been elevated in patients with allergic rhinitis but many variables have been shown to effect these values limiting the utility as a biomarker.

Conclusion:

Based on current literature there is a challenge in utilizing NNO as a clinical biomarker due to variability in measurement protocols. More recent studies have begun to standardize the measurement process and suggest that NNO may be useful in monitoring chronic sinusitis patients treatment and prognosis. More widely available measurement equipment and future studies will help further delineate the use of nitric oxide as a biomarker for sinonasal disease.