Otorinolaryngologic therapy

Nasal polyposis therapy

Code: 212 **Updated:** May 12, 2026

Background

Nasal polyposis (NP) prevalence is estimated to reach 40% in the CF population and it is present also in the youngest patients (Mohd Slim MA, 2016).

This complication may be the first symptom suggesting CF diagnosis (Olszowiec-Chlebna M, 2017) and monitoring through routine endoscopy, even in the absence of nasal symptoms, is highly recommended (Weber SA, 2016). It has recently affirmed (Manji J,2018) that in CF children, the level of IL-13 in nasal lavage samples could potentially serve as a non-invasive clinical tool in predicting NP.

A recent study (Terlizzi V, 2018), in which it has been investigated disease clinical aspects concordance in a cohort of 101 pairs of siblings with CF, NP, requiring surgery, has shown a concordance for disease = 52%. In the same study the poor correlation of NP to other clinical manifestations, such as the pancreatic status and the severity of lung disease, imply that modifier genes play a role in determining NP and might confirm previous observations about an association between the IFRD1-rs7817 polymorphism and NP in CF patients (Baldan A, 2015).

NP presents with nasal obstruction, anosmia, rhinorrhoea, post nasal drip, and, less commonly, facial pain. In children with CF, the presence of NP seems to be associated with significantly lower exhaled nitric oxide levels than in children without (de Winter-de Groot KM, 2013). Eosinophils are present both in cystic fibrosis-related polyps and in idiopathic non CF-related polyps. However, in CF, neutrophilic infiltrate is more frequently present, indicating chronic mucus stasis and infection (Chaaban MR, 2013). NP is associated with a higher risk of lower respiratory tract infections due to P. aeruginosa and a worse quality of life, mainly if polyposis causes complete nasal obstruction. As affirmed (Mainz JG, 2012), usual treatment includes topical and systemic corticosteroids and/or nasal washing with medicated salt water. If early management is not effective, endoscopic removal becomes necessary to stop polyposis progression (Kang SH, 2016).

Issues

Symptomatic therapy efficacy (quality of life, nasal symptom validated score, polyp size, respiratory function) and safety.

Optimal management to prevent surgical intervention.

What is known

One CDSR (Ribeiro LA, 2023) investigated randomized controlled trials (RCTs) and quasi?RCTs. (cross?over trials not considered). Trials that randomize individual participants and also evaluate trials that use within?participant randomization, if authors find trials that randomize by nasal side. Children and adults diagnosed with CF and CRS with nasal polyposis, according to clinical findings in line with the European position paper on rhinosinusitis and nasal polyposis (EPOS) were included. Sinus surgery alone or in combination with medical treatment (non?surgical) was compared to medical treatment (non?surgical) alone. Authors identified 66 publications relating to 50 studies from electronic searches. Only one study fulfilled the inclusion criteria, and only limited information was available. In this study, 28 participants aged 19 to 28 years were randomized in equal numbers to either nasal irrigation alone or nasal irrigation with surgery (endoscopic polypectomy with extended sinusotomy). The certainty of the evidence was very low according to the GRADE approach. There was one episode of bleeding during surgery that was corrected during the procedure with no further consequences. The study did not report on survival. Authors concluded for very low?certainty evidence if endoscopic sinus surgery to treat chronic rhinosinusitis with nasal polyposis in cystic fibrosis is effective. Future research should be multicentric to increase the number of participants and increase statistical power. Adequate randomization and allocation concealment are important to guarantee that the groups are similar. Blinding, however, may not be possible in an ethical trial; even without blinding, results can achieve high?level evidence if the outcomes used are objective parameters. Future research should follow participants of all ages for at least 12 months to evaluate the evolution of nasal polyposis, its recurrence and how symptoms may return. Mortality is an important outcome to be assessed. Future clinical research should consider the effects of cystic fibrosis transmembrane conductance regulators, a new group of drugs that may affect the development of nasal polyps.

One Cochrane review (Beer H, 2015) is available. It deals with topical nasal steroid therapy. Results are taken from only one RCT, in which 46 CF patients were enrolled and efficacy and safety of betamethasone sodium phosphate twice a day for six weeks has been studied. There was no difference in nasal symptom score between the treatment and placebo groups. Betamethasone was effective in reducing the size of polyps, but was associated with increased reports of mild side effects, nasal bleeding and discomfort. The small number of enrolled patients and the lack of a sufficient follow-up period might be a bias in demonstrating a clear effect of topical steroid use. The authors affirm that there is no clear evidence for using topical steroids in people with cystic fibrosis and nasal polyposis.

A systematic review (Gallardo R, 2026) on Nasal Endoscopy Scores in CF patients treated with CFTR Modulators identified only 10 studies among 232 records) which met inclusion criteria representing populations from six countries. Most studies assessed triple

therapy (Elexacaftor/Tezacaftor/Ivacaftor). Endoscopic scores, including the Modified Lund-Kennedy scale, showed significant reductions in nasal polyps, mucosal edema, and discharge. Pediatric and adult groups benefited alike, with triple therapy proving more effective than dual or monotherapy. Secondary outcomes included improved pulmonary function, weight gain, and olfactory recovery. This review demonstrates that CFTR modulators provide significant benefits for sinonasal disease in CF, reinforcing their role as a comprehensive therapeutic approach addressing both upper airway and systemic disease burdens.

Unresolved questions

Safety and efficacy of local betamethasone therapy prescribed for a period long enough to study its clinical impact on outcomes other than polyps size.

Safety and efficacy of therapy protocols other than local betamethasone.

No RCT are ongoing on this topic.

Keywords

Nasal Polyps;