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## **The role of nasal washes in CF patients affected by chronic rhinosinusitis**

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### **Background**

Cystic Fibrosis (CF) presents multiorgan manifestations that include chronic rhinosinusitis (CRS) with or without nasal polyposis.

Nasal washes (NWs) are widely used in clinical practice especially in CF patients, although their effectiveness on Ear Nose Throat (ENT) symptoms is controversial.

In this study we evaluate the performance and the safety of a NWs solution, with or without surfactant, to reduce symptoms and bacterial load.

### **Materials and methods**

We enrolled 20 CF patients (mean age: 27,6 years) with CRS, confirmed by nasal endoscopy. All patients, colonized by *Pseudomonas Aeruginosa*, performed daily a NW by physiological solution or by saline solution with surfactant (Naridek). All patients, at the time of enrollment, filled out a sinonasal questionnaire (SANQ11) and they received instructions for proper washing. During follow-up, we evaluated the reduction of the bacterial load in the nasal lavage. We assess the nasal cavities by endoscopy (2.7 mm 30° rigid endoscope - Storz, Tuttlingen, Germany) according to a modified Lund Kennedy endoscopic scoring system:

- rhinorrhea (present = 0, mild = 1, purulent = 2);
- edema, and hyperemia (absent = 0, mild = 1 or severe =2)
- nasal mucosa (eutrophic = 1; hyperemic = 2; dystrophic = 3);
- left and right turbinate hypertrophy (none = 0; mild = 1; medium = 2; and serious = 3).

All subjects underwent the Sniffin'Sticks to evaluate the olfactory performance.

## Results

Twelve patients completed 4 months of treatment: 6 patients performed the treatment with Naridek and 6 patients with physiological solution.

Due to the small sample size, the scores were added together to have an overall indication of the treatment.

(Table1)

	Nasal endoscopy	ENT signs score	Olfactory performance	SNAQ 11
<b>Naridek V1</b>	80	72*	169	197**
<b>Naridek V4</b>	15*	15*	159	98**
<b>Physiological solution V1</b>	68	61	151	166
<b>Physiological solution V4</b>	52	39	159	152

\*P<0.05 \*\* p< 0,01

The bacterial colonization in NWs shows no statistically significant difference. However, in 2 patients, we detected a reduction of the bacterial load. While there was no difference in the saline-treated group.

## Conclusions

Considering our small sample we can only draw some great deal to think about:

- treatment with NWs allows an improvement of the ENT symptoms and is well tolerated by patients. These data are confirmed by the ENT signs score and by the reduction of the SNAQ11 score in both treatment arms;
- the solution with surfactant (Naridek) significantly improves the ENT signs and decreases the nasal endoscopy and the SNAQ11 scores;
- no benefit was detected at the evaluation of olfactory performance.

In conclusion, even if further confirmations are necessary on broader cases, it seems to emerge as significant the role of surfactant in the therapeutic advantage of NWs.