

# Nasal irrigation with licorice extract to treat inflammation of the nose and sinuses

<b>Submission date</b> 13/02/2020	<b>Recruitment status</b> No longer recruiting	<input type="checkbox"/> Prospectively registered <input type="checkbox"/> Protocol
<b>Registration date</b> 17/04/2020	<b>Overall study status</b> Completed	<input type="checkbox"/> Statistical analysis plan <input checked="" type="checkbox"/> Results
<b>Last Edited</b> 14/12/2022	<b>Condition category</b> Ear, Nose and Throat	<input type="checkbox"/> Individual participant data

## Plain English summary of protocol

### Background and study aims

Using nasal irrigation with a saline solution is often recommended by physicians to reduce symptoms of inflammation of the nose and sinuses. However, the effect of the procedure is not good enough and lasts for a short time. The salty, bitter taste after nasal irrigation often makes patients unwilling to use it as daily care. Additional medications, such as corticosteroid, have been proposed to enhance the effect of nasal irrigation, however, patients can be wary of using steroids.

Licorice, a very common natural material, and has been found to have anti-inflammatory and immunomodulatory effect. Its sweet taste and smell are generally well-liked. For this study, a nasal irrigant containing licorice extract was developed.

The aim of this study is to see if nasal irrigation with licorice extract is more effective than with saline.

### Who can participate?

Adults with rhinitis or chronic rhinosinusitis

### What does the study involve?

Participants will use either a licorice, corticosteroid or salt water nasal irrigation at home twice per day over 4 weeks. They will be assessed at the start, middle (2 weeks) and end (4 weeks) of the study for changes to their nose and sinus using a blood test, questionnaires and clinical examination.

### What are the possible benefits and risks of participating?

Because we will teach those participants how to do nasal irrigation correctly by an expert before study, they will have the benefit to learn the skill for further nasal care. In addition, any kind of interventions (NILE, NICS or NIIS) would be supposed to improve their nasal symptoms by degrees. According to our preliminary study, nasal irrigation with licorice was considerably safe without significant side effect and only some irrigation-related adverse events, such as transient ear pain or stuff were encountered but those discomfort feelings could be self-limited in a short time.

Where is the study run from?  
Chiayi Chang Gung Memorial Hospital (Taiwan)

When is the study starting and how long is it expected to run for?  
March 2018 to October 2021

Who is funding the study?  
Chiayi Chang Gung Memorial Hospital (Taiwan)

Who is the main contact?  
Dr Geng-He Chang  
genghechang@gmail.com

## Contact information

**Type(s)**  
Public

**Contact name**  
Dr Geng-He Chang

**ORCID ID**  
<https://orcid.org/0000-0001-5939-9747>

**Contact details**  
Chiayi Chang Gung Memorial Hospital  
No. 6  
West Section  
Jiapu Rd  
Puzi City  
Chiayi County  
Chiayi  
Taiwan  
613  
+886 5 362 1000 ext. 2076  
genghechang@gmail.com

## Additional identifiers

**Clinical Trials Information System (CTIS)**  
Nil known

**Protocol serial number**  
CPRPG6H0011

## Study information

**Scientific Title**

Investigating the effect of nasal irrigation with isotonic saline and extract of licorice on treatment of chronic rhinitis and sinusitis

## **Acronym**

NILE

## **Study objectives**

The anti-inflammatory and immunomodulatory effects of licorice have been well-studied. We hypothesise that licorice will be a more effective nasal irrigant than saline

## **Ethics approval required**

Old ethics approval format

## **Ethics approval(s)**

Approved 21/09/2018, the Chang Gung Medical Foundation Institutional Review Board (No. 199, Dunhua N. Rd., Songshan Dist., Taipei City 105, Taiwan (R.O.C.), troublefup6@cgmh.org.tw, 886-3-3196200 ext.3708), ref: 201800183A0C501A3.

## **Study design**

Randomized parallel trial

## **Primary study design**

Interventional

## **Study type(s)**

Treatment

## **Health condition(s) or problem(s) studied**

allergic rhinitis, non-allergic rhinitis, chronic rhinosinusitis with polyposis, chronic rhinosinusitis without polyposis, nasopharyngeal carcinoma post-radiotherapy complicated with sinusitis

## **Interventions**

The study includes five patient groups

1. Allergic rhinitis
2. Non-allergic rhinitis
3. Chronic rhinosinusitis with polyposis
4. Chronic rhinosinusitis without polyposis
5. Nasopharyngeal carcinoma post-radiotherapy complicated with sinusitis.

AT recruitment, patient past medical records will be assessed to know if there is oral or intranasal antihistamine or steroid used one month before study (the enrollment should stop to use those medication for one month at least before study). Patient's history will be taken to know if there is experience of sinonasal surgery (ex: turbinoplasty, septoplasty, rhinoplasty, sinus surgery, skull base surgery, etc.) or radiotherapy for nasal cavity, sinus or nasopharyngeal malignancy. Additionally, total IgE level and specific allergen test (MAST) will be checked on every participant to facilitate us to classify those patients (ex: allergic rhinitis or non-allergic rhinitis).

The participants in each group will be assessed at baseline and randomized to receive one of the three following interventions.

1. Nasal irrigation with licorice extract (NILE)
2. Nasal irrigation with corticosteroid solution (NICS)
3. Nasal irrigation with isotonic saline solution (NIIS)

The intervention is performed by patients at home twice per day over 4 weeks.

Before the study, every participant will accept subjective evaluation with questionnaires, including the total symptom scores (TSS composed of rhinorrhea, pruritus, sneezing and blockage; none=0, mild=1, moderate=2, severe=3, summing scores range from 0 to 12), visual analogue scores (VAS) for rhinorrhea, pruritus, sneezing, blockage, postnasal drip and sleeping quality (0-100mm for each items) and Sino-nasal Outcome Test (SNOT-22). In addition, every patient will be evaluated objectively by flexible nasopharyngoscopy with Lund-Kennedy scores (scores: 0-12) and acoustic rhinometry to analyze the nasal resistance. We will collect patients' nasal discharge for analysis of inflammatory cytokines at our laboratory. Participants will return to the outpatient department for two follow up sessions during the intervention, at 2 weeks and 4 weeks. The above measurements will be done before the study and at 2 and 4 weeks of follow-up points.

### **Intervention Type**

Procedure/Surgery

### **Primary outcome(s)**

1. Improvement in nasal obstruction measured by TSS (0-3), VAS (0-100) and SNOT22 at 0, 2 and 4 weeks
2. Improvement in rhinorrhea measured by TSS (0-3), VAS (0-100) and SNOT22 at 0, 2 and 4 weeks
3. Improvement in sneezing measured by TSS (0-3), VAS (0-100) and SNOT22 at 0, 2 and 4 weeks
4. Improvement in itchy nose measured by TSS (0-3), VAS (0-100) and SNOT22 at 0, 2 and 4 weeks
5. Improvement in postnasal drip measured by TSS (0-3), VAS (0-100) and SNOT22 at 0, 2 and 4 weeks
6. Improvement in sleep quality measured by TSS (0-3), VAS (0-100) and SNOT22 at 0, 2 and 4 weeks

### **Key secondary outcome(s)**

1. Nasal condition measured by nasal endoscopic examination, which is scored by using Lund Kennedy endoscopic scoring system, at 0, 2 and 4 weeks
2. Nasal resistance measured using acoustic rhinometry at 0, 2 and 4 weeks
3. Analysis of cytokines in the nasal discharge at 0, 2 and 4 weeks

### **Completion date**

31/10/2021

## **Eligibility**

### **Key inclusion criteria**

1. Diagnosis of allergic or non-allergic rhinitis
2. Diagnosis of chronic rhinosinusitis with or without nasal polyps

### **Participant type(s)**

Patient

**Healthy volunteers allowed**

No

**Age group**

Adult

**Sex**

All

**Total final enrolment**

60

**Key exclusion criteria**

1. Aged <20 years
2. Antihistamine or corticosteroid (oral form or intranasal spray) use within 4 weeks of the intervention
3. Pregnancy
4. Planned sinonasal surgery within 4 weeks of the intervention
5. Allergy to licorice.

**Date of first enrolment**

04/12/2018

**Date of final enrolment**

30/04/2021

**Locations****Countries of recruitment**

Taiwan

**Study participating centre**

**Chiayi Chang Gung Memorial Hospital**

Department of Otolaryngology

No. 6

West Section

Jiapu Rd

Puzi City

Chiayi County

Chiayi

Taiwan

613

**Sponsor information**

## Organisation

Chiayi Chang Gung Memorial Hospital

## ROR

<https://ror.org/04gy6pv35>

## Funder(s)

### Funder type

Hospital/treatment centre

### Funder Name

Chiayi Chang Gung Memorial Hospital

### Alternative Name(s)

Chia-Yi Chang-Gong Memorial Hospital, Chang Gung Memorial Hospital, Chia-Yi

### Funding Body Type

Private sector organisation

### Funding Body Subtype

Other non-profit organizations

### Location

Taiwan

## Results and Publications

### Individual participant data (IPD) sharing plan

The datasets generated and/or analysed during the current study during this study will be included in the subsequent results publication

### IPD sharing plan summary

Published as a supplement to the results publication

### Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
<a href="#">Results article</a>	Allergic rhinitis	15/07/2021	12/08/2022	Yes	No
<a href="#">Results article</a>	investigating nasal polyps in a small number of treated patients	29/11/2022	14/12/2022	Yes	No