**GASTROPHARYNGEAL REFLUX AND EUSTACHIAN TUBE DYSFUNCTION (SP 037)**

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**BACKGROUND**

- Laryngopharyngeal or Gastropharyngeal reflux describes the backflow of gastric contents to the level of larynx and pharynx (1).
- The exposure of the Upper respiratory tract to acid and pepsin causes mucosal inflammation because these tissues are not as well adapted to protect against gastric reflux as the tissues in the stomach or esophagus (2).
- It has been suggested that gastric contents could reach the nasopharynx, tonsil turbabula, and possibly transit the Eustachian tube to contribute to middle ear disease (3,4,5).

**OBJECTIVE**

Determining the responsibility of gastro-pharyngeal reflux (GPR) in the pathogenesis of the Eustachian tube dysfunction (ETD) in adults, using a therapeutic trial.

**MATERIALS AND METHODS**

- **Inclusion Criteria**
  - Patients with symptoms of Eustachian tube dysfunction
  - Associated or not to gastro-esophageal reflux symptoms
- **Exclusion Criteria**
  - Age < 18 years
  - Pregnancy
  - Down syndrome
  - Previous ear or sinus surgery
  - Radiation therapy to head and neck
  - Nasopharyngeal tumour
  - Recent upper respiratory tract infection (< 4 weeks)
- **Randomization in 2 groups**
  - The first group
    - Nasal corticosteroids Flutisone® (2 puffs in each nostril twice daily for two weeks and 2 puffs in each nostril once daily for four weeks)
    - Placebo
  - The second group
    - Nasal corticosteroids Flutisone®
    - Placebo
- **Outcome measures**
  - Severity of symptoms was assessed before and immediately after treatment by 2 means
  - 7 Items questionnaire administered by the same investigator. (Symptom severity)
  - Zoic 901 Middle Ear Analyzer (Madsen Electronics)

**RESULTS**

- **Symptoms**
  - Feeling of fullness/pressure in the ear on altitude changes
  - Otitis media
  - Relief of ear pressure when swallowing or yawning
  - Tinnitus of high or low frequency
  - Pulsatile tinnitus in supine position
  - Unilateral or bilateral hypoaacusis
  - Overall severity of symptoms

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<thead>
<tr>
<th>Symptoms</th>
<th>Severity</th>
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<td>Feeling of fullness/pressure in ear on altitude changes</td>
<td>0 to 5</td>
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<thead>
<tr>
<th>Antireflux</th>
<th>Severity</th>
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<td>Rabeprazole</td>
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<td>Placebo</td>
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| Sex ratio: Male/Female              | 3.5/6.4  |
| Mean age (years)                   | 34.8/32.1|
| Body Mass Index (mean)             | 24/23.6  |
| Timpanogram A before treatment     | 7/8      |
| Compliance                         | 8/10     |
| Lost to follow-up                  | 0/0      |

**ABSTRACT**

- **Objective**
  - To determine the responsibility of gastro-pharyngeal reflux (GPR) in the pathogenesis of Eustachian tube dysfunction (ETD) in adults, using a therapeutic trial.

**DISCUSSION**

There is substantial experimental literature suggesting GPR plays a role in chronic URT inflammation. Nasopharyngeal exposure to experimental reflux alters the E/F mucosa histopathology, in Wistar rats, increasing goblet cell density and numbers of lymphocytes and polymorph nuclear leukocytes (2). Pepsin is present in the pediatric middle ear effusion (6). There is progressive impairment of ventilatory function and mucociliary clearance with repeated transmucosal injections of HCl and pepsin (3).

However, the consistent improvement of symptoms in randomized controlled studies remains elusive (7). Limitations of our study are:
- Small number of patients
- Difference of initial severity of symptoms in the groups despite randomization
- Once daily PPI treatment.

**CONCLUSIONS**

- Despite the small number of patients, the study shows a significant improvement of Eustachian tube dysfunction symptoms under rabeprazole.
- This is another argument suggesting the responsibility of gastro-pharyngeal reflux in the pathogenesis of Eustachian tube dysfunction, but larger double blind controlled studies are needed.

**BIBLIOGRAPHY**


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