

Laryngopharyngeal reflux

- development and refinement of diagnostic tools

som för avläggande av medicine doktorsexamen vid Sahlgrenska akademien vid Göteborgs
Universitet kommer att offentligens försvaras i hörsal Arvid Carlsson, Medicinaregatan 3,
Göteborg, fredagen den 4 december 2009 kl.13.00

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The thesis is based on the following papers:

I. Andersson O, Ylitalo R, Finizia C, Bove M, Ruth M. Pharyngeal reflux episodes at pH 5 in healthy volunteers. *Scand J Gastroenterol* 2006;41:138-143.

II. Andersson O, Moller RY, Finizia C, Ruth M. A more than 10-year prospective, follow-up study of esophageal and pharyngeal acid exposure, symptoms and laryngeal findings in healthy, asymptomatic volunteers. *Scand J Gastroenterol* 2009;44:23-31.

III. Andersson O, Rydén A, Ruth M, Moller RY, Finizia C. Validation of the Swedish translation of LPR-HRQL (Submitted).

IV. Andersson O, Rydén A, Ruth M, Moller RY, Finizia C. Development and validation of a laryngopharyngeal reflux questionnaire, PRSQ (Submitted).

Göteborg 2009



University of Gothenburg

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Abstract

Laryngopharyngeal reflux (LPR), characterized by symptoms of chronic cough, hoarseness, throat clearing, globus, laryngospasm, throat pain and excessive mucus has in recent years been recognized as an extra-esophageal manifestation of gastroesophageal reflux disease (GERD). There are still many questions to be answered regarding how to diagnose the LPR disease and how to effectively select patients that may benefit from treatment.

The aim of this thesis was to develop and refine diagnostics of LPR.

In study I, an upper limit of normality (ULN) for hypopharyngeal acid exposure with a cut-off level of pH5 instead of the traditional pH 4 was established. Re-evaluation of ambulatory two-level 24-hour pH-registrations of 35 healthy volunteers showed an ULN of 1.5% of the pH registration.

In study II we investigated the natural history of LPR and if asymptomatic pharyngeal reflux is a risk factor for the development of LPR disease. Twenty-four healthy volunteers were re-evaluated after 13 years with pH-monitoring, symptom registration and a larynx examination. Upper airway symptoms had developed in 10 of 24 (42%) subjects and pathological laryngeal findings in 9 (39%) subjects. However, the portion of subjects with pathological acid exposure at pH 4 in the hypopharynx had decreased from 42 to 13%.

Study III describes the Swedish translation and adaption of the questionnaire Laryngo Pharyngeal Reflux – Health Related Quality of Life Questionnaire (LPR-HRQL). LPR-HRQL was psychometrically evaluated in a population of 228 patients with upper airway symptoms. The Swedish translated version of LPR-HRQL proved to be a statistically valid instrument to assess HRQL in patients with LPR disease.

Study IV described the development and psychometric evaluation of the Pharyngeal Reflux Symptom Questionnaire (PRSQ) in the same cohort. After analysis and item-reduction it was found to be a valid and reliable instrument.

The present thesis reports that the presence of asymptomatic hypopharyngeal reflux do not constitute a risk factor for future development of LPR. Although upper airway symptoms and pathological laryngeal findings seem to develop over time in a sample of healthy volunteers, there was only a weak correlation between symptoms, laryngeal findings and pH-monitoring results. The thesis also reports on normal values for hypopharyngeal reflux with a pH 5 which may potentially improve upon diagnosis since weakly acidic reflux has been implicated in mucosal damage and symptom generation. The thesis also presents validated questionnaires in Swedish for health related quality of life (LPR-HRQL) and diagnosis (PRSQ) of the LPR disease. Correctly developed and validated patient reported outcome (PRO) questionnaires have the potential to sharpen the diagnosis and to capture a treatment effect, both in research and in the clinic.

Keywords: reflux, larynx, hypopharynx, pH-monitoring, questionnaires, validation

ISBN: 978-91-628-7850-0