Determinants of reflux-induced chronic cough

Thomas V K Herregods¹, Ans Pauwels², Jafar Jafari³, Daniel Sifrim³, Albert J Bredenoord¹, Jan Tack², André J P M Smout¹

Abstract

Objective Gastro-oesophageal reflux is considered to be an important contributing factor in chronic unexplained cough. It remains unclear why some reflux episodes in the same patient causes cough while others do not. To understand more about the mechanism by which reflux induces cough, we aimed to identify factors which are important in triggering cough.

Design In this multicentre study, 49 patients with reflux-associated chronic cough were analysed using 24-hour pH-impedance-pressure monitoring. The characteristics of reflux episodes that were followed by cough were compared with reflux episodes not associated with cough.

Results The majority (72.4%) of the reflux episodes were acidic (pH<4). Compared with reflux episodes that were not followed by cough, reflux episodes that were followed by a cough burst were associated with a higher proximal extent (p=0.0001), a higher volume clearance time (p=0.002) and a higher acid burden in the preceding 15 min window (p=0.019) and higher reflux burden in the preceding 30 min window (p=0.044). No significant difference was found between the two groups when looking at the nadir pH, the pH drop, the acid clearance time or the percentage of reflux episodes which were acidic.

Conclusions The presence of a larger volume of refluxate and oesophageal exposure to reflux for a longer period of time seems to play an important role in inducing cough, while the acidity of the refluxate seems to be less relevant. This helps explain the observation that most patients with chronic cough tend not to benefit from acid inhibitory treatment.

http://dx.doi.org/10.1136/gutjnl-2017-313721
Contributors: TVKH designed the study, collected data, analysed and interpreted data, drafted the manuscript, and critically revised the article for important intellectual content; AJB and AJPMS designed the study, interpreted data and critically revised the manuscript for important intellectual content; AP and JJ collected data, interpreted data, and critically revised the article for important intellectual content. DS and JT interpreted data and critically revised the article for important intellectual content.

Funding: TVKH is funded by the European Union's Seventh Framework Programme under REA grant agreement no. 607652 (NeuroGut).

Competing interests: AJB received research funding from Endostim, Medical Measurement Systems, Danone and Given and received speaker and/or consulting fees from MMS, Astellas, AstraZeneca and Almirall; DS received a research grant from Sandhill Sc USA.

Ethics approval: Review board of the Academic Medical Centre.

Provenance and peer review: Not commissioned; externally peer reviewed.

Request permissions
If you wish to reuse any or all of this article please use the link below which will take you to the Copyright Clearance Center's RightsLink service. You will be able to get a quick price and instant permission to reuse the content in many different ways.

Copyright information: Published by the BMJ Publishing Group Limited. For permission to use (where not already granted under a licence) please go to http://www.bmj.com/company/products-services/rights-and-licensing/

Read the full text or download the PDF:
Consultant Paediatric Gastroenterologist x2
Newcastle, Newcastle Upon Tyne
Replacement post to join 3 Consultant. The post includes out-of-hours Paediatric Gastroenterology on-call & ward week cover 1:5
Recruiter: Newcastle Upon Tyne Hospitals NHS Foundation Trust
Apply for this job

Consultant Gastroenterologists
Crewe, Cheshire | £76,001 to £102,465 pa
You will be joining a progressive, successful, award winning Foundation Trust.
Recruiter: Mid Cheshire Hospitals NHS Foundation Trust
Apply for this job

10 Clinical Senior Lecturer Posts
Norwich, Norfolk
These posts are available immediately on an indefinite basis and may be full or part-time.
Recruiter: University of East Anglia
Apply for this job

Consultant Gastroenterologist (ERCP)
Dubai, Abu Dhabi (AE)
Mediclinic Middle East is seeking highly competent individuals with higher level certifications from reputable institutions.

We recommend
Determinants of perception of heartburn and regurgitation.
A J Bredenoord et al., Gut, 2005

Weakly acidic reflux in patients with chronic unexplained cough during 24 hour pressure, pH, and impedance monitoring.
D Sifrim et al., Gut, 2005

Gastro-oesophageal reflux and aspiration of gastric contents in adult patients with cystic fibrosis.
K Blondeau et al., Gut, 2008

Management of heartburn not responding to proton pump inhibitors.
R Fass et al., Gut, 2009

Relevance of volume and proximal extent of reflux in gastro-oesophageal reflux disease.
D Sifrim, Gut, 2005

Determinants of Reflux-Induced Chronic Cough