CASES REPORT

AN EFFECTIVE AND PHYSIOLOGICAL LIFESTYLE CHANGE FOR MANAGEMENT OF GASTROESOPHAGEAL REFLUX DISEASE

Mohammad A Randhawa, Taley Yar, Anton Gillessen*

Department of Pharmacology and Physiology, College of Medicine, University of Dammam, Dammam, Saudi Arabia,
***Chefarzt der Klinik für Innere Medizin, Herz-Jesu-Krankenhaus, Münster, Germany**

Abstract: Proton pump inhibitors (PPIs) are commonly used in the treatment of gastro-oesophageal reflux disease (GERD). Some disadvantages of these acid- suppressing drugs circulate and patients ask for alternatives. Transient lower oesophageal sphincter relaxations (TLESRs) are important cause of reflux. Gastric distension in upper stomach are strongest stimulus for generation of TLESRs and is aggravated by intake of food in between meals. In the light of pathophysiological mechanisms it is suggested that increasing interval between meals and only soft drinks in between will reduce reflux episodes. The hypothesis was tested in 4 patients with endoscopically proven reflux oesophagitis and/or typical reflux symptoms. Three patients followed our advice to eat twice a day, with soft drinks in between. One patient had a light breakfast but increased the interval between lunch and dinner to 8 hours. All cases were relieved from repeated reflux episodes, in 1–2 weeks, without any medication.

Keywords: GERD, pathophysiology, increased interval between meals, lifestyle change

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INTRODUCTION

Many lifestyle changes have been suggested for the management of GERD, including: reducing body weight, elevating head of bed at sleep, sleeping 3–4 hours after dinner and avoidance of smoking, alcohol, tight belt and foods that trigger reflux, e.g., coffee, chocolate, fatty meals.[1] Transient lower oesophageal sphincter relaxations (TLESRs) immediately precede reflux episodes and are considered as important cause of reflux. Gastric distension particularly below cardia is the strongest stimulus for the generation of TLESRs and plays an important role in postprandial reflux events. The gastric distension will aggravate, particularly in cardiac end, with intake of food when the stomach already contains food and thus increase the possibility of reflux.[2] It is suggested that increasing the interval between meals (e.g. two meals a day) and use of soft drinks in between will reduce episodes of reflux. We intend to conduct a longitudinal study to test our hypothesis. However, presently, observations of four individuals are mentioned only.

CASE REPORTS

First case

A 51-year-old male from Herz-Jesu-Krankenhaus Hospital, Münster, Germany, was found to have reflux oesophagitis of grade Los Angles a (LA a) on oesophago-gastro-duodenoscopy (EGD). Helicobacter pylori (Hp) was negative on urease test. He followed the advice to take only two meals per day, with liquids, like tea, milk, fruit juices, in between whenever felt hungry during the day.

Second case

A 48-year-old woman from Herz-Jesu-Krankenhaus Hospital was found to have reflux oesophagitis grade LA a on EGD and was Hp negative. She also followed the advice to take only two meals a day with liquids in between.

Third case

A man of 56 years from Al-Khobar, Saudi Arabia, had repeated episodes of night refluxes with heart burn and sore throat for 2–3 weeks and was advised to take two meals a day, with soft drinks in between.

Fourth case

A man of 35 years from Al-Khobar, Sausdi Arabia,, had typical reflux symptoms, did not agree for two meals but took a very light breakfast and increased the interval between lunch and dinner to 8 hours.

All patients improved and were free of reflux episodes in 1–2 weeks time, without any medication.

DISCUSSION

In a recent study conducted at Aseer Central Hospital, Abha, Saudi Arabia, the prevalence of gastro-oesophageal reflux (GERD), with or without oesophagitis or hiatus hernia was 15%, which was lesser by 5% than a decade ago. This sudden tremendous increase in GERD was attributed to changes in lifestyle such as fatty meals, fast foods, smoking and obesity.[3] The relevant pathophysiology of reflux disease, risk factors with PPIs and our hypothesis for its management are briefly discussed below.

Gastric acid secretion increases during the cephalic phase**,** involving the smell and sight of food as well as in the gastric phase**,** in which the presence of food in the stomach causes distension and the activation of stretch receptors, vasovagal and local reflexes, release of gastrin releasing peptide (GRP or Bombesin), release of gastrin from gastrin producing cells (G-cells) in the antrum**,** stimulation of parietal cells directly and via

histamine from enterochromafin (ECL) cells. When the acidic food reaches the lower part of the stomach, it causes antral D-cells to secrete somatostatin, which has an inhibitory effect on G-cells and ECL-cells, to limit further secretion of HCl. This inhibitory response is accentuated by the intestinal phase, which is triggered by the presence of food in the intestines, causing further decrease in the gastric secretion via Cholecystokinin (CCK), Glucagon like peptide (GLP-1) and secretin.[4] It is anticipated that ingesting a meal on top of partially or completely full stomach is likely to inhibit the release of somatostatin by buffering/diluting the acid in the stomach. This would decrease in the inhibitory effect of somatostatin on G-cells and ECL-cells, resulting into another surge in the acid secretion. This increase in the acidity in upper stomach together with increased gastric pressure, due to next meal, is likely to increase the reflux episodes.

During the inter-digestive phase (or the fasting state) the distal stomach is engaged in a recurrent contraction pattern known as migrating myoelectrical complex (MMC). MMC serves to clear the stomach of secretions, debris, and microbes during fasting.[4] It is suggested that a second meal over a meal would affect these propulsive movements, delay the gastric emptying and favour reflux. Moreover, physical nature of food remains crucial in regulating emptying rate. After a liquid meal the gastric emptying begins instantly and emptying half-life is about 30 min. Whereas, after a solid meal, the linear emptying occurs after a lag phase and the emptying half-life is about 2 hours.[5] Therefore, meal over a meal, particularly solid meal, is more likely to delay gastric emptying and promote reflux.

PPIs are frequently used for the management of GERD. Although relatively safe, however, their long term use is associated with many risks, including; nausea, abdominal pain, headache and flatulence; serious infections like diarrhoea caused by the C. difficile and community-acquired pneumonia; vitamin B_{12} deficiency and osteoporosis-related fractures of the spine, wrist or hip, etc.[6–8] In the light of these reports, alternate remedies for the management of GERD are urgently needed.

It is suggested that an increase in the interval between meals and intake of fluids only during the intervening period will decrease reflux episodes in many ways: a) prevent undue increase in the acidity provoked by a meal over meal, b) reduce the development of TLESRs triggered by over distension of stomach subsequent to another meal, and c) favour gastric emptying by promoting MMC during fasting. Thus the suggestion of two meals a and only liquids in between, whenever the individual/patient feels hungry or thirsty, would work as an antacid, an anti-secretory drug as well as a prokinetic drug.

This suggestion is related to the advice by Luqman (Luqman the Wise, 1100 BC) to his son mentioned in an authentic saying of Prophet Muhammad (Peace be upon him):

عن عبيدالله بن محصن الانصاري قال قال رسول الله صلى الله عليه وسلم: قال لقمان لابنه يا بني لاتأكل شيئا على شبع، فانك إن تتركة للكلب خير لك من ان تاكلة
اخرجه الترمذي

Translation: Obaidullah son of Mohsin Al-Ansari (Allah be pleased from him) has reported from Prophet Muhammad (Peace be upon him) "Luqman (Allah be pleased from him) said to his son not to eat (more/again) when you have eaten to your satisfaction. If you leave it for a dog is better than you take it."
Tirmidhi (Allah be kind to him).[9]

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Address for Correspondence:

Dr. Mohammad Akram Randhawa, Department of Pharmacology, College of Medicine, University of Dammam, PO Box 2114, Dammam, 31451, Saudi Arabia. **Cell:** +966-506883523
Email: mrakramsa@yahoo.co.uk