

UNSUBSTANTIATED THEORY

The story of a physician, his bowels and beer

Iain C. Murray MDCM, Carol S. Heck PhD

Celiac disease may be treated by eliminating gluten-containing foods from the diet, which can cause misery for some patients. However, some low-dose gluten exposure may be acceptable. This possibility provided us with the idea to describe the response of a single subject (one of the authors) to low-dose gluten exposure in the form of beer.

Stuff we did

We recruited a participant who had received a diagnosis of celiac disease 6 years earlier after having been found to have iron deficiency anemia. The diagnosis of celiac disease was confirmed by serology and small bowel biopsy. We used a prospective, uncontrolled, pre- and post-test mixed methodological study design. Our convenience sample consisted of 1 beer-loving 48-year-old male gastroenterologist ($n = 1$). A retrospective sample size calculation suggested a minimum of 1 pint of beer per day.

The intervention consisted of the participant ingesting 1 beer, each day, for 31 consecutive days. The following beers were considered to be appropriate for ingestion: Guinness, Molson Export, imported beers, various microbrewery selections or any other gluten-containing beverage. Appropriate locales for ingestion included golf courses, pools, cottages, lakeside or the local licensed establishment (colloquially referred to as “the pub”).

July 2012 was chosen as the data collection period for obvious reasons. Data collection occurred at baseline (immediately preintervention) and at the conclusion of the study (postintervention).

The participant was asked to keep a daily journal noting the type of beverage consumed and the time of consumption, and to record thoughts, experiences or concerns about the intervention. The participant’s opinions and perspectives on the intervention were also recorded. By the end of the study, the participant was engaging freely in one-on-one self-interviews (i.e., talking to himself) throughout the day or night.

The participant was not lost to follow-up.

Important things we found

During the intervention period, there was 100% compliance to the study protocol (i.e., 1 beer was ingested on each of the



© 2013 Thinkstock

31 intervention days.) The subject reported no gastrointestinal symptoms. Of the 31 journal entries, 28 (90.3%) listed the word “Mmm.” Other comments included “golden elixir,” “I like science!” “Cheers” and “I am glad to be making this contribution for the advancement of celiac disease research.”

There were no serious adverse events to report. A scraped knee was thought to be related to the copious amounts of (gluten-free) scotch administered shortly after a beer half-way through the study.

The social impact of celiac disease was evidenced by the following quotations from the participant:

“Celiac disease sucks. Seriously. The gluten-free diet is expensive and inconvenient. It is difficult to pull off at home; much more difficult on the road. If only one could have a nice cold beer at the end of the day to make up for it. But no. Beer contains barley. Barley contains gluten, so beer is off the menu.”

“[I’m] fed up with gluten-free beer and coolers. Scotch works, but not on a hot summer’s day. And don’t get me started on the whole Smirnoff Ice thing. You should know that, whereas coolers in Canada are spirit-based, in the [United] States, they are malt-based, and [therefore] not an option when travelling south of the border.”

The compassion and pioneering spirit of the participant was evidenced by the following quotation:

“If Barry Marshall got a Nobel prize after ingesting *Helicobacter pylori*, imagine the accolades I might get for participating in this study.”

Chit chat

The consumption of gluten-containing beer had no deleterious effect on our participant’s celiac disease.

To be labelled gluten-free in Canada, beer or other alcohol-containing products must contain less than 20 parts per million (20 mg/L) of gluten. The concentration of gluten in regular beers is not reported. The primary author emailed the major brewers to find out the gluten levels in several beers, but these data were not provided. Either the companies do not know, the concentration is not measured or they are not telling. Literature and Google searches failed to shed light on the issue; even Wikipedia was in the dark.

Reasons not to believe what we say

The current study is a single case study and therefore not generalizable to the entire celiac population. The duration of exposure may have been too short, as suggested by the participant.

A few random thoughts at the end

Perhaps having a pint every now and then is not so bad for people with celiac disease. Likely, these patients do so already if they are so inclined. For patients who are relatively tolerant and are able, on occasion, to ingest a gluten-containing beverage without symptoms, we postulate an improved quality of life.

Affiliations: Intestinal Health Institute (Murray), Markham, Ont.; University Health Network (Heck), Toronto, Ont.

Contributors: Iain Murray was in charge of the whole process and is solely responsible for any ethical breach. He was chief guinea pig and zymurgist. He wrote the original article. Carol Heck then completely rewrote it, leaving only a few specially worded sentences intact. Iain Murray then said “Yes, dear” and submitted the article. Both authors have approved its publication.

Competing interests: None declared.

This article has NOT been peer reviewed.

Correspondence to: Iain C. Murray, gimurray@rogers.com

CMAJ 2013. DOI:10.1503/cmaj.131382