

Coffee Ground Vomit: Does it Justify an Urgent Endoscopy?

Aria Khani*, Maksunova Y, Patel M and Besherdas K

Royal Free NHS Trust, London, United Kingdom

*Corresponding Author: Aria Khani, Department of Gastroenterology, Royal Free Hampsstead NHS Trust, London, United Kingdom.

Received: December 04, 2018; Published: February 01, 2019

Abstract

Introduction: Coffee ground vomit (CGV) is vomit that looks subjectively like coffee grounds. It is a common indication for inpatient admission and thereafter endoscopy. In an increasingly stretched inpatient endoscopy service it is important not to over burden it with endoscopies that could be performed safely as an outpatient.

Therefore, our aim is to evaluate the need for inpatient gastroscopy in patients who are deemed to have coffee ground vomiting.

Methods: A single centre, retrospective analysis was performed on patients endoscoped for the primary indication of coffee ground vomiting. Data was collected and scrutinized from the Electronic Patient Records (EPR) and Unisoft endoscopy-reporting tool at Barnet and Chase Farm Hospitals, Royal Free London for 12 months of 2017. Gastroscopy reports were studied to see whether endoscopic therapy was required. EPR was subsequently used to assess whether these patients had a significant drop in their haemoglobin (Hb).

Results: There were 2618 gastroscopies during the study period. Of these, 37 were indicated due to coffee ground vomiting with 29 being performed as an inpatient. Of these 29 patients, 27 (93%) had a significant drop in their Hb level prior to gastroscopy. One (3%) patient required endoscopic therapy.

In total, 12 patients had a diagnosis of oesophagitis, 3 had erosive gastritis, 3 non-erosive gastritis, 1 oesophageal ulcer, 3 duodenal ulcers, 3 non-erosive duodenitis, 1 pyloric ulcer and 1 hiatus hernia. 4 gastroscopies were completely normal. There were no patients with cancer diagnosis. Each diagnosis was reported separately if the report contained more than one diagnosis.

Conclusions: From this study we conclude that in the majority of patients endoscoped for coffee ground vomit do not require intervention during endoscopy. This study confirms our hypothesis and adds weight to the notion that patients with coffee ground vomiting do not necessarily require inpatient gastroscopy despite a significant Hb drop.

Keywords: *Coffee-Ground-Vomiting; Gastroscopy; Upper Gastro Intestinal Bleeding*

Abbreviations

EPR: Electronic Patient Records; Hb: Haemoglobin; CGV: Coffee Ground Vomit; GI: Gastrointestinal; UGIB: Upper GI Bleed; CE: Capsule Endoscopy; ED: Emergency Department

Introduction

Coffee ground vomit (CGV) is vomit that looks subjectively like coffee grounds. It is this lack of a definition or description that can often lead to any type of vomit being labelled as coffee ground. It is thought to occur due to the presence of coagulated blood in the vomit. Its presence implies that bleeding has ceased or may have been relatively modest [1]. The colour and shade of the vomit often reflects the duration of time that blood has remained within the gastrointestinal (GI) tract. More extended periods of time lead to a darker shade of red or even black or brown and hence the subjective description of coffee ground vomit [2].

There are many potential causes of CGV. These can include gastritis, oesophagitis, peptic ulcers, gastric and duodenal erosions, vascular malformations and occasionally benign or malignant tumours. In a significant number of cases, no cause is found [3]. The diagnosis relies on endoscopy, which also serves to provide a therapeutic intervention in cases of active bleeding. CGV itself can be a sign of acute upper gastrointestinal bleeding, one of the most common medical emergencies in the UK [4]. This is subsequently a common indication for inpatient admission and thereafter endoscopy. In an increasingly stretched inpatient endoscopy service it is important not to overburden it with endoscopies that could be performed safely as an outpatient.

Aim of the Study

Therefore, our aim is to evaluate the need for inpatient gastroscopy in patients who are deemed to have coffee ground vomiting. We hypothesize that patients with coffee ground vomiting do not have significant upper gastro intestinal bleeding requiring endoscopic intervention.

Method

A single centre, retrospective analysis was performed on patients endoscoped for the primary indication of coffee ground vomiting. Data was collected and scrutinised from the Electronic Patient Records (EPR) and Unisoft endoscopy-reporting tool at Barnet and Chase Farm Hospitals, Royal Free London for 12 months of 2017. Gastroscopy reports were studied to see whether endoscopic therapy was required (defined as use of adrenaline injection, banding, clips, haemospray or gold probe). EPR was subsequently used to assess whether these patients had a significant drop in their haemoglobin (Hb) defined as a Hb drop ≥ 20 g/dl. Two independent researchers carried this out.

Results

There were 2618 gastroscopies during the study period. Of these, 37 were indicated due to coffee ground vomiting with 29 being performed as an inpatient. Of these 29 patients, 27 (93%) had a significant drop in their Hb level prior to gastroscopy. One (3%) patient required endoscopic therapy. This patient had significant co-morbidities, including ischaemic heart disease, hypertension, aortic valve replacement as well as a drop in Hb.

In total, 12 patients had a diagnosis of oesophagitis, 3 had erosive gastritis, 3 non-erosive gastritis, 1 oesophageal ulcer, 3 duodenal ulcers, 3 non-erosive duodenitis, 1 pyloric ulcer and 1 hiatus hernia. 4 gastroscopies were completely normal (Figure 1). There were no patients with cancer diagnosis. Each diagnosis was reported separately if the report contained more than one diagnosis.

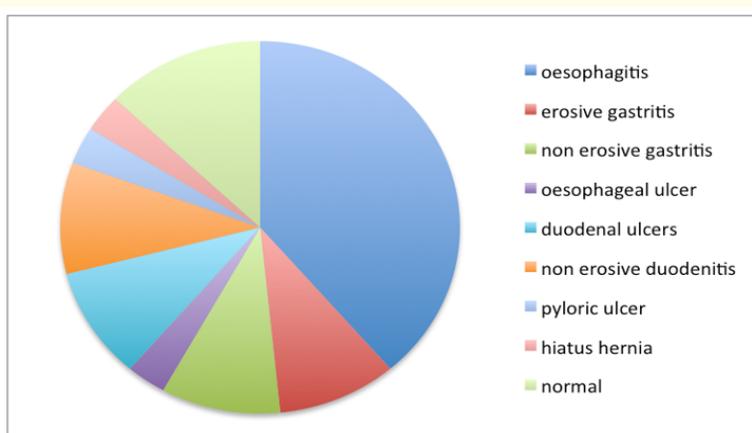


Figure 1: Graph Illustrating various diagnoses post inpatient gastroscopy.

Discussion

CGV is widely accepted as a sign of acute upper GI bleed (UGIB) and this definition is incorporated into national guidelines [5-7]. Whilst the presenting complaint of frank haematemesis has been shown to be associated with high-risk active UGIB, presence of CGV is suggestive of more limited UGIB [6,8].

We hypothesised that patients with CGV do not have significant UGIB requiring endoscopic intervention. The findings of this study support our hypothesis, as 27 (97%) of patients with CGV did not require therapy at endoscopy. This outcome is reflected in the literature to date. In a randomised study, early endoscopy in patients with coffee ground or clear nasogastric aspirate was not associated with significant benefit when compared to patients with fresh bloody aspirate [8]. Those with GCV did not require an endoscopic therapy and therefore endoscopy could be delayed [8]. This is further supported by multi-centre retrospective cohort study, ENERIGIB-Turkey, which in its subgroup analysis did not find an association between CGV and performance of therapeutic procedures during endoscopy for non-variceal UGIB [9]. However, this study has a relatively young population which limits its generalizability [9]. A retrospective analysis by Mana, *et al.* similar to our study in methodology found that only 3% of a more elderly patient population presenting with CGV required intervention at the time of endoscopy [10]. The main pathology at endoscopy was oesophagitis, which is also reflected in our findings [10]. Oesophagitis is common in elderly patients with CGV, but bleeding is seldom life-threatening [10,11]. Mana, *et al.* similarly concluded that where CGV is the primary indication for endoscopy, intervention is seldom required despite positive upper gastrointestinal findings at the endoscopy and consequently urgent endoscopy is not warranted [10].

Of note, the single patient requiring endoscopic intervention in this study was > 65 years of age, had Hb < 80 g/dL following a CGV episode and had multiple comorbidities including ischaemic heart disease. Whilst we are unable to perform sub-group analysis in view of a single patient requiring endoscopic therapy, a number of studies to date have demonstrated that advanced age, presence of major organ disease and Hb < 80 g/dL are associated with active bleeding and need for early endoscopic intervention [10,12-17]. Most notably, the Glasgow-Blatchford Scoring Tool has been widely verified to effectively risk-stratify patients presenting with acute UGIB [18,19]. Combination of low haemoglobin, high blood urea nitrogen, male sex, haemodynamic instability and presence of malaena, syncope, liver or cardiac pathology have been shown to identify high-risk patients with acute UGIB [12,18-20]. While the Hb drop was found in 93% of our patients, 23% had < 80 g/dL - one of which required endoscopic intervention. Blatchford, *et al.* did not incorporate CVG into the tool as in isolation, it has been found to be associated with low risk case fatality [12]. Consequently, a paradigm shift from concentrating CGV as a presentation in isolation to adopting a more holistic and multi-faceted approach to assessing on whether a patient, in light of their comorbidities and current clinic picture, requiring an urgent endoscopy may be warranted. This, however, would ideally need to be assessed in a randomised controlled trial setting to provide a valuable insight.

Furthermore, investigations such as capsule endoscopy may serve an additional role in triaging patients presenting acutely with CGV. In a prospective randomized controlled study, Sung, *et al.* assessed whether capsule endoscopy (CE) would be able to identify high-risk cases requiring admission and urgent endoscopy among haemodynamically stable patients presenting to emergency department (ED) with either CGV or malaena [21]. It found that none of the patients discharged following a negative CE (79% of patients assigned to CE group) had recurrent episode of UGIB or died [21]. CE had 88% sensitivity and 64% specificity in detecting acute UGIB in ED setting in a study by Meltzer, *et al.* who also found that the investigation was well tolerated among the patients and there was a high level of concordance in interpretation between emergency physicians and gastroenterologists [22]. Whilst further studies are needed, CE may prove to be a useful investigation in an emergency setting to triage patients with CGV and identify high-risk cases requiring urgent inpatient endoscopy.

As well as parameters incorporated into the Glasgow-Blatchford Tool, the age has been widely shown to predict complications and mortality associated with acute UGIB [9,10,11,15,17]. Mana, *et al.* noted that patients with advanced age presenting with CGV had mortality of 30% at 3 months post-endoscopy due to unrelated illnesses irrespective of endoscopy findings [10]. It has been suggested that in many cases CGV may be a reflection of pathology originating outside the upper GI tract or a disseminated systemic inflammatory response such as acute pancreatitis, renal or cardiac failure, drug toxicity or cancer, despite positive endoscopy findings [11]. Therefore,

the prognosis in medical patients with CGV may be largely dependent on the underlying co-morbidities rather than endoscopic findings [10,11]. A review of literature by Day, *et al.* highlighted that in a number of case reports blackening of the oesophageal mucosa was found in patients presenting with CGV [23]. In these patients, the underlying pathologies included low flow states secondary to sepsis, systemic inflammatory response associated with pancreatitis, cholangiocarcinoma, nephrotic syndrome and obstruction gastric secondary upper GI volvulus, rather than active UGIB requiring endoscopic intervention [23]. Thus co-morbid conditions and underlying pathology must be carefully considered when managing patients with CGV before opting for urgent endoscopy.

We acknowledge that our study has a number of limitations. The sample size of patients with CGV was small, thus the study was underpowered to demonstrate differences between subgroups. Furthermore, the retrospective cross-sectional nature of our methodology exposes our data to numerous confounding variables, possibly affecting overall outcome and interpretation. Additionally, we did not assess the mortality data post-endoscopies, which would help to further guide discharge process.

Conclusion

From this study we conclude that in the majority of patients endoscoped for coffee ground vomit do not require intervention during endoscopy. This study confirms our hypothesis and adds weight to the notion that patients with CGV do not necessarily require inpatient gastroscopy despite a significant Hb drop. If findings from this study were to be repeated in other centres we may be able to discharge stable patients with coffee ground vomiting to early outpatient endoscopy thus reducing length of stay and pressure on already stretched inpatient emergency workload.

Bibliography

1. Campbell Ian W and Moray Nairn. "Scottish Intercollegiate Guidelines network: management of diabetes (SIGN 55)". *The British Journal of Diabetes and Vascular Disease* 2.1 (2002): 50-52.
2. Ansari P. "Overview of GI bleeding" (2018).
3. Palmer Kelvin. "Acute upper gastrointestinal haemorrhage". *British Medical Bulletin* 83.1 (2007): 307-324.
4. Siau K., *et al.* "Management of acute upper gastrointestinal bleeding: an update for the general physician". *Journal of the Royal College of Physicians of Edinburgh* 47.3 (2017): 219-230.
5. Palmer KR. "Non-variceal upper gastrointestinal haemorrhage: guidelines". *Gut* 51.4 (2002): iv1-iv6.
6. Saltzman JR. "Approach to acute upper gastrointestinal bleeding in adults". UpToDate (2018).
7. Kim Bong Sik Matthew, *et al.* "Diagnosis of gastrointestinal bleeding: a practical guide for clinicians". *World Journal of Gastrointestinal Pathophysiology* 5.4 (2014): 467-478.
8. Lin Hwai-Jeng, *et al.* "Early or delayed endoscopy for patients with peptic ulcer bleeding: a prospective randomized study". *Journal of Clinical Gastroenterology* 22.4 (1996): 267-271.
9. Mungan Zeynel. "An observational European study on clinical outcomes associated with current management strategies for non-variceal upper gastrointestinal bleeding (ENERGIB-Turkey)". *Turkish Journal of Gastroenterology* 23.5 (2012): 463-477.
10. Mana Fazia, *et al.* "The significance of coffee ground vomiting?" *Gastroenterology* 118.4 (2000): A1089.
11. Palmer Kelvin. "Acute upper gastrointestinal haemorrhage". *British Medical Bulletin* 83.1 (2007): 307-324.

12. Blatchford Oliver, *et al.* "A risk score to predict need for treatment for upper gastrointestinal haemorrhage". *The Lancet* 356.9238 (2000): 1318-1321.
13. Branicki Frank J., *et al.* "Bleeding duodenal ulcer. A prospective evaluation of risk factors for rebleeding and death". *Annals of Surgery* 211.4 (1990): 411-418.
14. Adamopoulos Adam B., *et al.* "Differentiation between patients with acute upper gastrointestinal bleeding who need early urgent upper gastrointestinal endoscopy and those who do not. A prospective study". *European Journal of Gastroenterology and Hepatology* 15.4 (2003): 381-387.
15. Rockall TA., *et al.* "Incidence of and mortality from acute upper gastrointestinal haemorrhage in the United Kingdom". *British Medical Journal* 311.6999 (1995): 222-226.
16. Van Leerdam ME., *et al.* "Acute upper GI bleeding: did anything change?: Time trend analysis of incidence and outcome of acute upper GI bleeding between 1993/1994 and 2000". *The American Journal of Gastroenterology* 98.7 (2003): 1494-1499.
17. Blatchford Oliver, *et al.* "Acute upper gastrointestinal haemorrhage in west of Scotland: case ascertainment study". *British Medical Journal* 315.7107 (1997): 510-514.
18. National Institute for Health and Clinical Excellence. "Acute upper gastrointestinal bleeding in over 16s: management" (2012).
19. Chen I-Chuan., *et al.* "Risk scoring systems to predict need for clinical intervention for patients with nonvariceal upper gastrointestinal tract bleeding". *The American Journal of Emergency Medicine* 25.7 (2007): 774-779.
20. Laursen Stig Borbjerg., *et al.* "The Glasgow Blatchford score is the most accurate assessment of patients with upper gastrointestinal hemorrhage". *Clinical Gastroenterology and Hepatology* 10.10 (2012): 1130-1135.
21. Sung Joseph JY., *et al.* "Use of capsule endoscopy in the emergency department as a triage of patients with GI bleeding". *Gastrointestinal Endoscopy* 84.6 (2016): 907-913.
22. Meltzer Andrew C., *et al.* "Video capsule endoscopy in the emergency department: a prospective study of acute upper gastrointestinal hemorrhage". *Annals of Emergency Medicine* 61.4 (2013): 438-443.
23. Day Andrew and Mazin Sayegh. "Acute oesophageal necrosis: a case report and review of the literature". *International Journal of Surgery* 8.1 (2010): 6-14.

Volume 6 Issue 2 February 2019

©All rights reserved by Aria Khani., et al.