

The Role of Diet and Hygiene in the Management of Digestive Haemorrhages on Peptic Ulcer Disease

Rahantasoia Finaritra CFP^{a*}, Andrianjafiarivony C^b, Randrianasolo F^c,
Rajaonera AT^d, Samison LH^e

^{a,c,e}Visceral Surgery Department, Joseph Ravoahangy Andrianavalona Hospital, Antananarivo 101,
Madagascar

^{b,d}Surgical Intensive Care Unit, Joseph Ravoahangy Andrianavalona Hospital., Antananarivo 101, Madagascar

^aEmail: rcasimirfleurprudence@gmail.com

^bEmail: andrianjafiarivonycarol@gmail.com

Abstract

Introduction: Digestive hemorrhage on peptic ulcer is one of the major digestive emergencies. Therapeutic progress in recent years has been based on the removal of risk factors. Our objective was to evaluate the impact of diet and hygiene on digestive haemorrhage in peptic ulcer disease.

Patients and method: Our study was prospective, monocentric, reported on digestive haemorrhages on peptic ulcer over a period of 3 months. The variables studied included: age, gender, toxic and drug habits, diet, and change in a 1-month follow-up. The Epiinfo statistical test analyzed the data. A p-value of less than 0.05 was considered significant.

Results: Fifty-two cases were retained at the end of the study. The odds ratio between irregular meal schedules and GI bleeding was OR = 18.90 [4.39 - 81.20]. Dietary habits included: chocolate (15.38%), acidic meals (61.54%), spices (30.77%). Three (5.7%) patients had relapsed.

Conclusion: The diet recommended in our study was a diet rich in soluble fiber with proscription of toxic habits. The rate of recurrence after one month of regression was low, however our study was limited by its low statistical power.

Keywords: Digestive hemorrhage; Madagascar; Nutrition; Peptic ulcer.

* Corresponding author.

1. Introduction

Digestive hemorrhages can occur on a previously known peptic ulcer (PUD) or be the circumstance of its discovery [1]. Recent therapeutic advances in the initial management of this condition had improved its prognosis. Seventy per cent of ulcer-related GI bleeding spontaneously dries up under medical treatment or when risk factors are removed [2]. The role of dietary hygiene in the prevention of future recurrence requires further study to verify its validity. This therapeutic approach would be an asset in the treatment of peptic ulcers given the rise in antibiotic resistance to *Helicobacter pylori* [2]. The objective of our study is to measure the influence of diet on the occurrence of digestive haemorrhages in peptic ulcer disease.

2. Patients and method

Our study was prospective, monocentric study performed on a series of cases of digestive hemorrhage on peptic ulcer at the Joseph Ravoahangy Andrianavalona University Hospital in Madagascar over a three-month period. Ruptured esophageal varices were not included. Sampling was exhaustive and non-randomized. The parameters studied were collected on a pre-established questionnaire sheet that was filled in at the emergency room when cases were admitted. The questionnaire included: age, gender, history of smoking, alcoholism, decoction, corticosteroid therapy, NSAID or long-term anticoagulant use. Dietary habits were detailed by looking for a tendency towards a particular diet (chocolate-rich, spicy, coffee, tea, soft drinks, hot meal, acidic meal, high-fibre diet). Regularity of meal times was also sought during the interview. Afterwards, on leaving the service, in addition to the treatment for the eradication of *Helicobacter pylori*, high-fibre meals were recommended and toxic habits were prohibited. The evolution of the patients was then evaluated after one month of follow-up in order to judge the effectiveness of these measures by calculating the recurrence rate. No patients were remunerated during the study. Consent was informed with respect to ethics and medical confidentiality.

3. Results

Fifty-two cases were retained at the end of the study. The median age was 48 years with a sex ratio of 0.72. Thirty-seven patients were previously treated for 80.77% of patients had an irregular meal (OR = 18.90 [4.39 - 81.20]). Coffee was found in the eating habits in 73.08%, decoction in 19.23% and tea in 42.31%. Similarly, 30.77% of patients tended to have a diet rich in spices, compared to 15.38% for chocolate and 61.54% for acidic meals. 59.9% of the population acknowledged having a diet rich in fruit and vegetables. Twelve (23.1%) patients were frequent users of NSAIDs. The association between toxic habits and the occurrence of digestive bleeding was not significant as p was not less than 0.05 in our study (Table I). No patients were on anticoagulant therapy. Stress was found in all patients in our study. During hospitalization, fasting was prescribed in case of active GI hemorrhage, and then re-feeding was done gradually. On discharge from hospital, coffee and alcohol were banned, as well as soft drinks and NSAIDs unless there was an absolute therapeutic indication. Fruits and vegetables were recommended. Treatment for the eradication of *Helicobacter pylori* was instituted. A second upper gastrointestinal endoscopic look was required at the end of treatment to assess the effectiveness of management. In our study, with one month's hindsight, the evolution was favourable in 73% ($n=38$), three (5.7%) patients had relapsed despite good

therapeutic compliance.

Table 1: Toxic habits of patients

Toxic habits	Yes Headcount (%)	No Headcount (%)
Tobacco	18 (34,6%)	34 (65,4%)
Alcohol	38 (73,1%)	14 (26,9%)
Decoction	14 (26,9%)	38 (73,1%)

4. Discussion

In our study, patients were put on a digestive resting diet until the digestive bleeding dried up and then prescribed a high-fibre diet. The literature recommends that patients presenting a digestive hemorrhage on peptic ulcer should start on a strict diet at the beginning. After verification of hemostasis at upper GI endoscopy, The liquid diet can be started, then gradually changed to a normal diet within 48 to 72 hours. Soluble fibre from fruits (oranges, apples), vegetables (carrots) and legumes (beans, dried beans, lentils and peas, barley, nuts) is thought to have a protective effect on the gastric mucosa [3]. A diet rich in vitamin A (carrot, broccoli, sweet potato, kale, spinach, kale, etc.) promotes the production of mucus in the gastrointestinal tract. A prospective cohort of 47,806 men demonstrated a significant protective association between vitamin A intake and the complication of peptic ulcers [3,4]. Studies conducted in China on green tea had also shown that foods rich in flavonoids (garlic, onions, cranberries, strawberries, blueberries, broccoli, carrots, peas) would inhibit the growth of *Helicobacter pylori* without harming stomach microbes [3]. If in our study: 30.77% took spices frequently, and 15.38% had a diet rich in chocolate. No other scientific study had demonstrated the effects of spices, citrus fruits or chocolate on ulcer digestive bleeding. Even if the association was not significant between toxic habits and digestive haemorrhages; alcohol and coffee stimulate the secretion of gastric acid and weaken the gastric mucosa, which can cause bleeding in the gastric wall [4]. However, according to a 2002 study by Stermer, moderate wine consumption does not lead to gastric ulcers, moderate wine consumption would impair the development of *Helicobacter pylori*. A study conducted by Cohen and his colleagues compared the dose-response relationships of caffeine, regular coffee and decaffeinated coffee on gastric acid secretion and sphincter pressure in normal subjects. Decaffeinated coffee gave a maximum acid response of 16.5 +/- 2.6 mEq per hour which was similar to that of regular coffee 20.9 +/- 3.6 mEq per hour, both values being higher than that of caffeine, 8.4 +/- 1.3 on a cup-equivalent basis. However, a meta-analysis on the effect of coffee consumption on peptic ulcers did not find a significant relationship. Compared to the prescription of NSAIDs, the introduction of a proton pump inhibitor is recommended for people at risk (over 65 years of age) or in combination with anticoagulants, antiplatelet agents [2]. Irregular meals were also recognized as a risk factor for complications of peptic ulcers that can cause digestive bleeding. A regular meal schedule is therefore recommended for the prevention of recurrence [1,2]. Stress also promotes gastric hypersecretion, which can become harmful. This table is especially encountered in cases of significant physical stress in patients in intensive care [5]. According to Tryba and his colleagues severe burns, head trauma, shock, acute respiratory failure, serious infections, and multi-visceral failures predispose to stress induced gastroduodenal hemorrhage [5,6]. Continued good enteral

nutrition could reduce the risk of upper GI hemorrhage in resuscitation. Although Cook and his colleagues showed that lack of enteral nutrition was a risk factor for hemorrhage in ventilated patients, no evidence based on a randomized study has yet been able to confirm this hypothesis. Many teams recommend that oral re-feeding should be encouraged as much as possible once gastric enteral nutrition is available [6]. The second "look" makes it possible to monitor the effectiveness of the established therapeutic protocol; it is advisable to respect a two-week delay between the end of treatment and the endoscopy in order to have a good specificity of results [2,5].

5. Recommendations

In our study, a standard diet protocol was established within our unit. The dietary recommendations favoured foods rich in fibre (fruits and vegetables), vitamin A and vitamin C. Excessive consumption of alcohol was discouraged, as well as tobacco and coffee. Meals taken at regular times were also considered to be protective factors.

6. Limit of the study

Our study is methodologically limited by the absence of a control case. Indeed, these results can be seen as a half-empty glass, since the efficacy of the diet can only be evaluated in people who have already presented a digestive hemorrhage on UGD. The low statistical power also suggests a randomized study on a subsequent large scale to strengthen the validity of our study.

7. Conclusion

Toxic habits are recognized in the literature as a risk factor for digestive haemorrhages on UGDs despite the non-significant association found in our results. The recurrence rate was low at one month's follow-up, however our study was limited by its low statistical power. No randomized study has yet been able to confirm the association between these dietetic diets and digestive haemorrhages in UGDs, hence the interest of continuing our research in this area.

8. Funding

This study did not benefit from any funding.

9. Conflict of interest

The authors participated equally in this study. There was no conflict of interest.

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