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Contribution of Gastroscopy in Non-Varicoseupper Gastro-Intestinal Bleeding and Predictive factors for the Need for Endoscopic Treatment : A Prospective Study

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Abstract :

Introduction :

Upper gastro intestinal bleeding (UGIB) remains a frequent cause of emergency hospitalisation in gastro enterology. Schematically, they are divided into varicose and non-varicose Upper gastro intestinal bleeding (NVUGIB), the latter being the most frequent will be the subject of our study.

The aim of our study is to evaluate the contribution of gastroscopy in non-varicose HDH and to search for factors that predict the need for endoscopic haemostasis.

Methods:

This prospective monocentric cross-sectional study of 261 patients, was conducted over a one year period from June 2020 to August 2021 in the department of endoscopic emergency of Mohammed V Military Hospital, Rabat, Morocco.

Result :

The average age of our patients was 58 ±17 years,witha sex-ratio of 2.57.

28.7% of our patients had comorbidities, with 19.9% taking antithrombotic drugs.

91% of our patients received proton pump inhibitor (PPI) treatment with syringe pump before performing the endoscopy.

The main findings at endoscopy were pepticulcer disease in 39% of cases, erosive gastritis or duoden it is in 30% of cases, and esophagit is in 15% of cases.

Active bleeding during endoscopy was identified in 12% of cases, requiring endoscopic haemostas is in 6.5% of cases, however, surgery was necessary in 3 patients for bleeding not suitable for endoscopic haemostasis.

In a multi variate analysis following adjustment of the study parameters, namely, age, gender, the presence of comorbidities, the use of PPI at syringe pump and the presence of active bleeding, only the presence of active bleeding and the use of PPI at syringe pump influenced the need for endoscopic haemostasis. In fact, the presence of active bleeding during endoscopy multiplies the risk of recourse to endoscopic haemostasis by 15, whereas the use of PPI with syringe pump seems to reduce this risk by 75%.

Conclusion :

NVUGIB remains dominated by ulcerative origin. According to our study PPI treatment initiated prior to endoscopy for upper gastrointestinal bleeding may reduce the proportion of patients with stigmata of recent haemorrhage and therefore reduces the need for haemostatic treatment.

Keywords:- *non-varicose Upper gastro intestinal bleeding, gastroscopy, endoscopic haemostasis, proton pump inhibitor.*

I. INTRODUCTION

Upper gastro intestinal bleeding (UGIB) remains a frequent cause of emergency hospitalisation in gastro enterology.

Schematically, they are divided into varicose and non-varicose upper gastro intestinal bleeding (NVUGIB), the latter being the most frequent will be the subject of our study. Although all patients with suspected NVUGIB must under go endoscopy, some patients may not require endoscopic treatment.

Thus, the aim of our study is to evaluate the contribution of gastroscopy in NVUGIB and search for factors that predict the need for endoscopic haemostasis.

II. MATERIALS AND METHODS

A. Study design and participants:

This prospective mono centric cross-sectional study of 261 patients, wasconducted over a one yearperiodfromJune 2020 to August 2021 in the endoscopic emergency department of Mohammed V MilitaryHospital, Rabat, Morocco.

B. Methods and variables:

The study included all patients admitted in the emergency department for upper gastro intestinal bleeding, for whom the gastroscopy concluded to a non varicoseetiology.

We extracted demographic data (such as age and sex), clinical characteristics, endoscopic findings, and the rapeutic

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data (endoscopic haemostasis procedure), from endoscopy register of the emergency department.

C. Statisticalanalysis :

Descriptive data are presented as means (±standard deviation [SD]) for normally distributed continuous variables. Categorical variables were presented as counts and percentages.

Factors associated with the use of endoscopic haemostasis were studied by logistic regression.

A two-tailed P-value of <0.05 was considered statistically significant. All statistical analyses were performed using SPSS version 22.0 program

D. Ethical considerations :

Ethics committee approval was not required given the observational nature of the study and the use of anonymous clinical data for analysis.

E. Role of the funding source:

There was no funding source for this study. The corresponding author had full access to all the data in the study and had final responsibility for the decision to submit for publication

III. RESULT

Epidemiologically, the average age of our patients was 58 ±17 years, with age extremes ranging from 17 to 90 years, and the predominant age range was from 50 to 59 years (figure1)

Our series was characterized by a clear male pre dominance estimated at 72%, that being a sex-ratio of 2.57. This male predominance was linked to our medical facility's patient population, mostly comprised of male military patients.

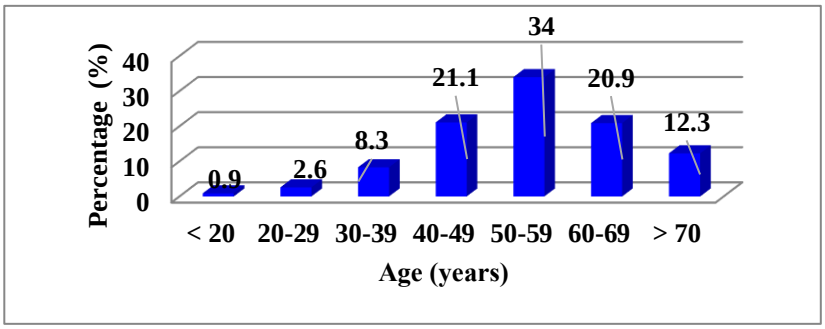

Fig. 1: Distribution of patients by age group.

28.7% of our patients had comorbidities, with 19.9% taking antithrombotic drugs.

91% of our patients received proton pump inhibitor (PPI) treatment withself-pulsing syringe before performing the endoscopy.

The main findings on endoscopy were pepticulcer disease in 39% of cases, erosive gastritis or duodenit is in 30% of cases, and esophagit is in 15% of cases (figure 2).

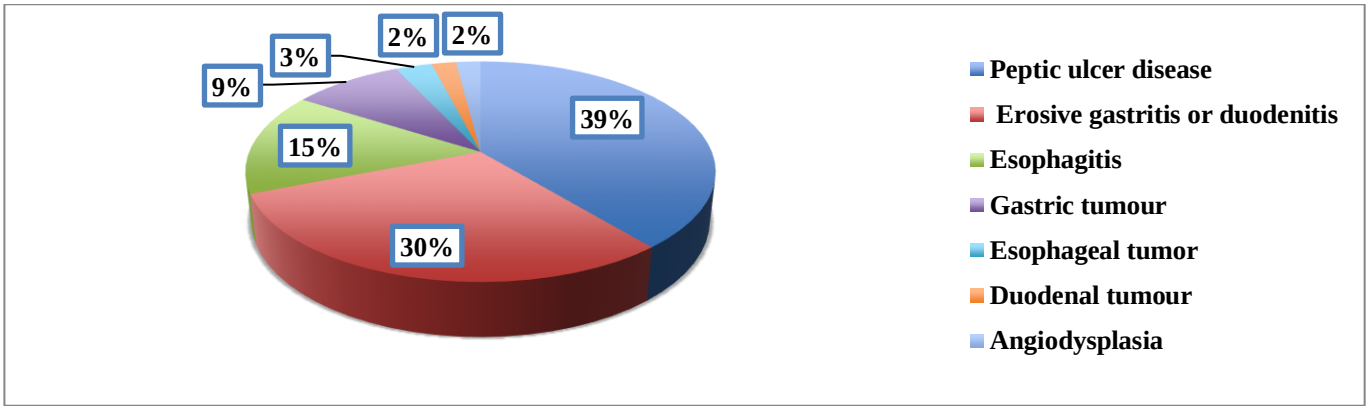

Fig. 2 : Distribution of patients according to gastroscopy finding

Active bleeding during endoscopy was identified in 12% of cases, requiring endoscopic haemostas is in 6.5% of cases, however, surgery was necessary in 3 patients for bleeding not suitable for endoscopic haemostasis.

In a multivariate analysis following adjustment of the study parameters, namely, age, gender, the presence of comorbidities, the use of PPI at syringe pump and the presence of active bleeding, only the presence of active bleeding (OR: 15.17, CI: 6.08-67.87, $p < 0.001$) and the use of PPI at syringe pump (OR: 0.249, CI: 0.093- 0.668, p=

0.006) influenced the need for endoscopic haemostasis. In fact, the presence of active bleeding during endoscopy multiplies the risk of recourse to endoscopic haemostasis by 15, where as the use of PPI with syringe pump seems to reduce this risk by 75%.

	OR	**95% CI**	***p***
Age	0.955	0.968-1.024	0.750
Gender (male)	0.866	0.358-2.193	0.794
Comorbidities	0.977	0.389-2.458	0.977
Presence of active bleeding	15.17	6.08-67.87	< **0.001**
Use of PPIwith syringe pump	0.249	0.093- 0.668	**0.006**

Table 1 : Factors associated with the use of endoscopic haemostasis in multi-variate analysis

IV. DISCUSSION

According to our study, PPI impregnation before performing gastroscopy for UGIB seems to have a positive effect on the quality of the endoscopy and reduces the need for endoscopic haemostasis, while the presence of active bleeding during gastroscopy was a predictive factor for the use of endoscopic haemostasis.

In a Korean retrospective series of 613 patients admitted for UGIB, a bloody nasogastric lavage and a hemoglobin level less than 8.6 g/dL were independent predictors for endoscopic hemostasis in patients with acute upper gastro- intestinal bleeding (1).

In another multi centric study of 1869 patients, a bloody naso gastric aspirate was significantly associated with high-risklesions for bleeding on endoscopy and therefore more need for endoscopic haemostasis. The same study found that the use of PPI before performing gastroscopy could reduce both the rate of rebleeding and mortality in patients with NVUGIB (2).

In the same perspective, a systematic review as sessing the effect of PPI use on the outcome of endoscopy for UGIB concluded that PPI therapy initiated prior to endoscopy could reduce the proportion of patients with active bleeding on endoscopy and reduce significantly the need for endoscopic haemostasis (3).

A recent Japanese study published in August 2021, that enrolled 509 patients with suspected NVUGIB who under went emergency endoscopy which aimed to assess the predictive factors for the need for endoscopic haemostasis in patients admitted for NVUGIB, used previously reported scores such as the Glasgow Blatch ford score and the Rock all score to establish a new, simpler and more accurate score (4).

This study concluded that the presence of syncope, haematemesis, a bloodurealevel ≥ 22.4 mg/dl and a urea/ creatinine ratio ≥30 were significantly associated with the need for endoscopic haemostasis ; and based on these results a novel scoring system named the Nagoya University score (*N* score) was proposed which is based on these 4 factors, allowing to select the patients who would require endoscopic haemostasis with a sensitivity of 84.5% and a specificity of 61.8% when this score ≥ 2.

Risk factor	Score
Syncope	3
Hematemesis	2
BUN ≧22.4 mg/dl	1
BUN/Cr ≧30	1
Total	7

Table 2 : N score for endoscopic intervention

BUN blood urea nitrogen, *Cr* creatinine

Our study has some strengths. We included detailed demographic factors, comorbidities, symptoms, signs, and endoscopy findings to better adjust for potential confounders.

An important limitation of the studies included in this review is the small proportion of patients receiving endoscopic haemostatic treatment

In conclusion, NVUGIB remains dominated by ulcerative origin. According to our study PPI treatment initiated prior to endoscopy for upper gastro intestinal bleeding may reduce the proportion of patients with stigmata of recent haemorrhage and therefore reduces the need for haemostatic treatment.

V. CONFLICT OF INTEREST

We have no known conflict of interest to disclose

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