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Effect of topical Tranexamic Acid in the treatment of peptic ulcer bleeding

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Abstract

Background: Upper gastrointestinal bleeding due to peptic ulcer disease is one of the most common emergencies that gastroenterologists encounter. The aim of this study is evaluating the effect of local Tranexamic Acid via endoscopic procedure for control of peptic ulceration bleeding. Materials and Method: during this study, 100 eligible patients with upper GI bleeding thanks to peptic ulcers enrolled and divided to 2 equal groups: within the first group epinephrine injection plus Argon Plasma Coagulation applied as standard treatment (control group), in the second group Tranexamic Acid solution sprayed in addition to standard treatment(intervention group). Estimated blood loss volume, the need of transfusion , hemoglobin drop, vital sign , pulse , got to the second endoscopy, deathrate , got to surgery, admission duration, and drug effectiveness regarding the ulcer location (duodenum or stomach) were evaluated in both groups and the differences expressed statistically. Results: The mean average ages of intervention and control groups were 62.819.6 and 63.117.8, yrs respectively estimated blood loss and need for transfusion were lower in the intervention group compared with the control group (p-value 0.05) Conclusion: Tranexamic Acid is a useful additive treatment for control of upper gastrointestinal bleeding and can be used in addition to standard treatment.

Demographic data, like age, sex, smoking, sort of GIB, vital signs, and laboratory data (hemoglobin (Hb), creatinine, prothrombin time, partial thromboplastin time, international normalized ratio, blood group/Rh), were recorded.The re-bleeding rate, number and type of transfusion, endoscopic and/or surgical intervention rate, ICU admission rate due to this condition, duration of ward/ICU admission, drug adverse effects, mortality rate, and causes of death were recorded within the first 24–72 h, and if possible, the patients were followed up for 1 month.

The 1-month deathrate and causes of death were recorded by calling the caregivers of the patients and/or hospitalization documents. Hemodynamic instability (shock, orthostatic hypotension) or active bleeding (manifested by hematemesis, bright red blood per nasogastric tube, or hematochezia) were indications for ICU admission and resuscitation. Need to blood transfusions were defined as Hb < 7 g/dl (70 g/l) for most patients, with a goal of maintaining it at a level ≥7 g/dl (70 g/l). The threshold might be higher at Hb ≥ 9 g/dl (90 g/l) for high-risk patients with adverse events in the setting of considerable anemia.17-19 However, need to blood transfusions were defined because the apparently normal Hb levels within the patients with active bleeding and hypovolemia.17 Re-bleeding was defined as overt hematemesis; passage of fresh blood from the rectum; a drop in Hb level of >2 g/l within any 24 h period after the first 24 h following endoscopic homoeostasis; shock (defined as a systolic blood pressure of ≤90 mmHg or a heart rate ≥110 beats/min) in the presence of continuing melena; or the presence of bright red blood in the stomach or duodenum, or both, at repeat endoscopy when more bleeding was suspected.

Results were presented as mean ± variance for quantitative variables and were summarized by frequency (percentage) for categorical variables. Continuous variables were compared using an analysis of variance or a Kruskal-Wallis H test whenever the info didn't appear to possess Gaussian distribution or when the idea of equal variances was violated across the study groups. Categorical variables were compared using the Chi-square test. All statistical analyses were conducted using the statistical software SPSS version 16.0 for windows (SPSS Inc., Chicago, IL, USA).

A p-value <0.05 was considered statistically significant. In total, 410 patients were enrolled in the study. The mean age of the participants was 58.81 ± 15.60 years and 66.8% were male; age and sex distribution between groups was not statistically different. A total of 23.9% of our patients were smokers, with no significant differences in the three groups (p = 0.784). Hematemesis was the most common clinical presentation of GIB overall. No significant differences were seen in the three groups according to the symptom presentations (p = 0.185).

Palliative radiation therapy has been used to treat bleeding from a variety of gastrointestinal tumors, with a variety of regimens. Although there is relatively sparse outcomes data, hemostasis has been reported in 50-73% of patients with locally advanced gastric cancer treated with radiation. This wide range of outcomes may be due to variations in the definition of hemostasis, with include no further bleeding, decreased transfusion requirements, or an increase in hemoglobin levels. A recent systematic review of 27 studies on the use of radiation therapy to treat bleeding in rectal cancer patients reported 81% of patients achieving hemostasis. Hematuria is often due to tumor invasion of the bladder, so initial therapies may include bladder irrigation and discontinuing medications that increase bleeding risk such as anti-inflammatories or anticoagulants. Surgical options may include transurethral resection of the bladder with coagulation, or cystectomy with urinary diversion. Radiation therapy with

various regimens have been used and report 50–92% hemostasis, with a range of 3–8 Gy/fraction . Patients with bleeding from bladder tumors may also achieve hemostasis by embolization of branches of the anterior trunk of the iliac artery. Renal artery embolization can be used to relieve hematuria due to malignant renal tumors, as well as any associated flank pain. A historical treatment for hematuria was intravesicular instillation of formalin, but this is no longer used due to discomfort, the risk of renal failure, and a need for general or spinal anesthesia.

Instead, alum or prostaglandins may be instilled into the bladder, with varying rates of hemostasis. All of these instillation treatments work by causing protein precipitation that occludes the bleeding vessels. Prostaglandin instillation is generally reserved for cases of alum failure, due to the increased cost, and issues of availability and storage.

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