Usefulness of BUN to predict the rebleeding in patients with non-variceal upper GI bleeding.

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Background and Aims: Non-variceal upper gastrointestinal bleeding (NVUGIB) is a serious medical condition requiring prompt resuscitation and early endoscopic therapy. Repeat endoscopy is suggested if recurrent or ongoing bleeding is suspected. However, endoscopic exam is somewhat troublesome and costly, and other markers are sometimes inaccurate to figure out the rebleeding occur. Blood urea nitrogen (BUN) is usually elevated in the UGIB. To date, the efficacy of follow-up BUN in rebleeding patients was not well investigated. Therefore, we aimed to evaluate the efficacy of follow-up BUN to predict the recurrent or ongoing bleeding in NVUGIB patients. **Patients and Methods:** We evaluated the patients who underwent endoscopic hemostasis for NVUGIB and follow-up endoscopy within 72 hours. We excluded the patients with variceal bleeding, chronic kidney disease, and history of GI surgery. We investigated the endoscopic findings, laboratory data including hemoglobin and BUN, vital sign, and any symptoms of bleeding in the patients having rebleeding or not. **Results:** A total of 172 patients with NVUGIB were investigated. 152 patients had not recurrent or ongoing bleeding at follow-up endoscopy and 20 patients showed rebleeding within 3 days. Comorbid diabetes was more popular in rebleeding patients (p=0.014). Gastric ulcer was most common cause in patients without rebleeding, whereas duodenal ulcer was most common cause in rebleeding patients. Follow-up BUN levels in rebleeding patients was higher than those in patients without rebleeding (p=0.006). The number of cases with decreased BUN and extent of BUN decrease were smaller in rebleeding patients (p<0.005). In addition, rebleeding patients showed higher BUN levels than normal value compared to patients without rebleeding (p=0.008). **Conclusions:** The follow-up of BUN level was useful tool for the prediction of recurrent or ongoing bleeding in the patient with NVUGIB. Therefore, it might be helpful to measure serially the BUN level for at least 3 days after initial endoscopy in NVUGIB to evaluate the rebleeding occur.

Table 1. Comparison between the patients without recurrent or ongoing bleeding and the patients with recurrent or ongoing bleeding in non-variceal upper gastrointestinal bleeding

Variables	Patients without recurrent or ongoing bleeding (n=152)	Patients with recurrent or ongoing bleeding (n=20)	p-value
Age (mean ± SD, year)	57.9±16.7	65.5±13.4	0.052
Gender (Male to Female)	127(83.6%):25(16.4%)	15(82.6%):5(17.4%)	0.352
Hypertension	46(29.8%)	10(52.6%)	0.066
Diabetes	25(16.6%)	8(42.1%)	0.014***
Anti-thrombotics use	47(31.1%)	4(22.2%)	0.590
Bleeding cause			0.426
Gastric ulcer	76(50.0%)	7(35.0%)	
Duodenal ulcer	54(35.5%)	9(45.0%)	
Other diseases*	22(14.5%)	4(20.0%)	
Hemoglobin level (g/dL)	9.8±2.9	9.1±3.3	0.384
Initial BUN level (mg/dL)	37.1±17.1	35.6±15.8	0.619
F/U BUN level (mg/dL)	22.3±12.9	29.9±13.9	0.006***
BUN decrease (mg/dL)	14.7±11.3	5.7±11.1	0.003***
Cases of BUN decrease	143(94.1%)	12(60.0%)	0.000***
High BUN at F/U EGD**	71(46.7%)	16(80%)	0.008***

BUN, blood urea nitrogen; F/U, follow-up; EGD, esophagogatroduodenoscopy

* Other diseases included Mallory-Weiss syndrome, gastric or duodenal erosions, angiodysplasia, etc.

** High BUN means more than 20 mg/dL of upper normal limit of BUN level.

*** P < 0.05