Effect of Implementing Nursing Protocol on clinical Outcomes of Acute Non-variceal Upper Gastrointestinal Bleeding Patients

Sanaa Saber Mohamed[1], Warda Ramadan Abouzied [2,] Eman Mamdouh Aziz Soliman [3] and Ragaa Dahi Mohamed [4].

[1]Lecturer of Critical Care & Emergency Nursing, Faculty of Nursing, Sohag University, Egypt.
[2,4]Lecturer of Critical Care & Emergency Nursing, Faculty of Nursing, South Valley University, Qena, Egypt.
[3]Lecturer of Critical Care & Emergency Nursing, Faculty of Nursing, Assuit University, Egypt.

Abstract

Background: One of the most common reasons for hospitalization, morbidity, and mortality related to digestive illnesses is Non-variceal upper GIT bleeding. Despite the improvement in the field, management of patients with Non- variceal Upper Gastrointestinal Bleeding (NVUGIB) has become more challenging due to comorbidities and complex therapies. This study aimed to evaluate the effect of implementing nursing care protocol on clinical outcomes of non variceal upper gastrointestinal bleeding patients. Design: A quasi-experimental research design was used. Setting: Gastroenterology Intensive care unit at Sohag University hospital, Upper Egypt. Sample: A convenient sample of 80 adult (male and female) patients was included. Tools: Three tools were utilized to collect data, Tool I: - NVUGIB assessment sheet, Tool II: Nursing NVUGIB care protocol and Tool III: Clinical outcome evaluation tool. Results: Illustrate that most common cause of non-variceal upper GIT bleeding in studied patients was peptic ulcer followed by Gastritis, 50% of study& 45% of control group were using NSAID before coming to hospital. In relation to mortality risk using Rockall score on 1st day of admission about half of study and control group were at high risk for mortality, while at 3rd day 52.5% in study group were at low risk. Conclusion: the implementation of nursing protocol for patients with NVUGIB improves patients' clinical outcomes and decrease rate of complication occurrence. Recommendations: Provide Gastroenterology intensive care unit with clear, illustrative nursing care protocols and booklets for management of patient with Non-variceal upper GIT bleeding.

Keywords: Non-variceal upper GIT bleeding, Nursing protocol and clinical outcomes

Introduction:

Acute non-variceal upper gastrointestinal bleeding remains a frequent and difficult emergency for gastroenterologists and general doctors[1]. Acute upper gastrointestinal bleeding (AUGIB) is a common, expensive, and possibly lethal illness that calls for quick evaluation and aggressive medical treatment. AUGIB is defined as haemorrhage that begins close to the ligament of Treitz in order to distinguish it from lower gastrointestinal bleeding involving the colon and middle gastrointestinal bleeding involving the small intestine distal to the ligament of Treitz [2].

Non-variceal bleeding is more frequent than variceal bleeding and peptic ulcer disease which accounts for 50-70%. Incidence of variceal bleeding accounts for less than 10% of all causes of GI bleeding but has a high mortality rate of about 30% during their initial hospitalization [3]. Various studies from Southeast Asia and Nepal have reported variable rates of bleeding from stomach and variceal ulcers. Depending on the various socioeconomic and demographic traits of the local people in these areas, the findings will vary [4].

Non-variceal causes of acute upper gastrointestinal bleeding including gastric and duodenal peptic ulcer accounting (28%−59%) are the most common causes of UGI bleeding. The rate of bleeding peptic ulcers caused by the use of aspirin and non-steroidal anti-inflammatory drugs has increased, despite the extensive use of proton pump inhibitors to reduce the incidence of UGI bleeding in the last 15 years. Furthermore, the mortality rate hasn't changed much over the last 20 years, primarily due to population aging and the presence of comorbidities [5].

Symptoms of AUGIB include melena, hematemesis, and anaemia. Hematemesis is the vomiting of bright red blood or "coffee ground" material. Other symptoms include breathlessness, syncope, and epigastric pain (because of volume reduction). When the source of the gastrointestinal blood loss is unknown, bleeding may be difficult to detect. When a patient has AUGIB, some prognostic factors may increase the chance of complications, such as morbidity and mortality. If any one or more of the prognosis indicators listed below are true, the patient should be admitted to the intensive care unit: age over 60, shock, comorbid conditions (such as heart, kidney, and liver disorders), Endoscopic endoscopy revealed substantial bleeding symptoms, persistent bleeding, low systolic blood pressure, and the need for more than six units of blood [6].

A lot of risk factors are known to influence the outcome in UGIB as Age, comorbidities, presence of shock, endoscopic diagnosis, hemoglobin values at the time, stigmata of recent hemorrhage and need for a blood transfusion have all been described as significant risk factors for re-bleeding and death [7].

The management of acute UGIB has significantly improved since the development of emergency endoscopy and contemporary endoscopic techniques for hemostasis control. Bleeding stops spontaneously without the need for any intervention in most

of the patients admitted to the hospital, except necessitating just hemodynamic assistance. However, up to 20% of patients require extra intervention because they continue to bleed or re-bleed. Re-bleeding more frequently has consistently been cited as the biggest risk factor for death and has an impact on how UGIB patients fare [(8)].

Several experimental scoring methods have been developed to support expecting result in patients with an assessment to improving patient management and supporting cost-effective use of resources [(9)]. The Rockall score is the most extensively used risk scoring system in UGIB. It was created in 1996 following the analysis of data from a significant English audit. The score, which takes into account the patient's age, hemodynamics, comorbidities, and endoscopic findings, was created to evaluate the risk of death after presentation with UGIB. The clinical Rockall score, which only takes into account clinical variables, is used to identify patients with AUGIB who encounter a bad result, such as mortality or recurrent bleeding. Which AUGIB patients died or had recurrent bleeding is also determined using the entire Rockall score, which takes into account clinical and endoscopic variables [(9)].

A nurse's involvement in treating a patient with upper GI haemorrhage calls for particular consideration. The nurse must first play a specialized role in providing nursing care to a patient who is in hypovolemic shock; patient comfort can also be preserved by determining whether analgesia is necessary. The nurse will be expected to provide continual assessments for the patient's fluid and electrolyte status and should feel comfortable performing ABC (airway, breathing, and circulation) resuscitation [(10)].

Nurses are in the key position to carry out health care. Health care providers who have continuous contact with patients and their families and have the opportunities to assess potential problem, specific care for patient and give teaching about all aspects of care [(11)].

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Significance of the study:

Acute upper gastrointestinal (UGI) bleeding represent an incidence of approximately 40−150 new cases per 100.000 population/ year, and it represents a one of most common cause of hospital admission with a markedly associated morbidity and mortality rate, especially in elderly subjects [(5)]. In Egypt, there are roughly 100 cases of upper gastrointestinal bleeding per 100,000 people per year. About four times as many people experience gastrointestinal bleeding from the upper GI tract as from the lower GI tract [(12)].

Based on the statistical data of the Gastroenterology Intensive care unit Sohag University hospital at 2021, number of patients admitted with 400 patients per year [(13)].

Aim of the study:

This study aimed to evaluate the effect of implementing nursing care protocol on clinical outcomes of acute non variceal upper gastrointestinal bleeding patients.

Research hypothesis:

Patients with acute non variceal upper gastrointestinal bleeding who expose to the nursing care protocol (study group) will exhibit an better improvement in their clinical outcomes than those patients exposed to routine hospital care (control group).

Subjects and methods:

Research design:

A quasi-experimental research design was used to conduct the current study.

Study Setting:

This study was conducted at Gastroenterology Intensive care unit at Sohag university hospital, Upper Egypt.

Study Subjects:

A convenient sample of 80 adult (male and female) patients who were admitted to the previously mentioned setting was included. The sample size was calculated based on the Epi info program according to the total population admitted per year to the gastroenterology ICU and the sample size was calculated as the following:

Z= confidence level 95%, d= Error proportion (0.05), P= population (80%), assuming total numbers of patient's admission. Then the patients were divided randomly and alternatively into two equal groups; 40 patients in each group as following:

Group (1): Study group, Consisted of 40 patients who were exposed to nursing care protocol.

Group (2): Control group, Consisted of 40 patients who were exposed to routine care in the Gastroenterology intensive care unit.

Tools of the study:

Three tools were utilized to collect data based on reviewing of the relevant literatures (Rockall. TA. et al, 1997, Green, S. M 2011, Ebrahimi, H., 2017 & Mohamed, A. S, et al, 2020).

Tool I: - NVUGIB assessment sheet:

The researchers created this tool after studying the pertinent literature. It included three parts as following:

Part 1: Socio demographic and medical data: That comprises the patient's code, age, sex, educational attainment, employment status, and marital status. Medical data includes cause of NVUGIB & past history of diseases.

Part 2: Patient Assessment Sheet includes:

Evaluation of hemodynamic parameters (temperature, respiration, pulse rate, SBP, DBP and MBP).

Arterial blood gases assessment (PH, Sao2, $PaCO_2$, HCO_3 & Pao2).

NVUGIB symptoms assessment includes Presenting symptom, Symptom duration & Medications used before admission.

Part 3: Neurological assessment sheet:

Using GCS scale, the scale provides a structure for assessment of patient's neurological status according to three sensory responses including visual, verbal and motor response. Each measure is scaled according to the level of impairment (Green, S. M 2011). **The GCS scoring system** involves.

- Severe= GCS ≤ 8
- Moderate= GCS 9 - 12
- Mild = GCS ≥ 13.

Tool II: Nursing NVUGIB care protocol, this tool developed after reviewing the related literature (Morton, P.G & Fontaine, K.D, 2013) which included many steps for patient care.

Tool III: Clinical outcome evaluation tool:

This tool developed after reviewing the related literature (Ebrahimi Bakhtavar, H, 2017 & Mohamed, A, S, et al. 2020) which included the following items:

Length of stay.

Death rate.

Complications occurrence (Hypovolemic shock , Liver failure , Hepatorenal syndrome & Infection)

Re-bleeding and death risk assessment using Rockall risk score: it is evaluating the system in patients with non-variceal UGIB; the score ranged from 0-9 and were divided into three risk categories; low risk ≤3, moderate risk 3-4, and high risk ≥4. They also revealed the good performance index of RS system in UGIB patient's triage.

Method

The study was conducted throughout three main phases which are preparatory phase, implementation phase and evaluation phase.

Preparatory phase:-

An approval from the ethical committee was taken from the Dean of the Faculty of Nursing, South valley University to conduct the study and delivered to the hospital authorities at Sohag University Hospital and approval to gather the necessary data after clarify the purpose and nature of the study before data collection.

Informed agreement was obtained from the chief of the gastroenterology intensive care unit at Sohag University Hospital.

The researcher created the instruments utilized in this study after reviewing the pertinent literature.

The tools of the study were tested for content validity by five experts (3) in the field of critical care nursing specialists, (1) Gastroenterologist, and (1) medical biostatistics to ensure validity.

Ethical considerations

The nature and aim of the study was clarified to each patient and to his relatives in case of unconscious patients.

Patients were given the assurance that the research's data would not be used again without their consent.

Patients were assured privacy and anonymity.

The researcher emphasized that the participation will be voluntary to participate in the study and the patients were given the assurance that they might reject to participate in the trial at any moment and/or withdraw without giving a reason.

A Pilot study:

A pilot study performed before data collecting begins in December 2021 on 10% of the sample admitted to Gastroenterology Intensive Care Unit in Sohag University Hospital to assess the applicability, clarity of the tools and recognize any problems. According to this pilot study, the necessary modifications were made. Additionally, it featured a time

estimate for when the tools would need to be completed.

Content validity and reliability:

Content validity was established by panel of five experts from faculty of nursing three in the field of critical care nursing specialists, one Gastroenterologist, and one medical biostatistics to ensure validity. Who examined the tools for administrative ease, clarity, relevance, thoroughness, understanding, and applicability and no modifications was needed. Content reliability of tools was confirmed for consistency by using Cronbach's alpha test. The tools proved to be reliable (0.703).

Data collection:

Data of the current study were collected from the end of July 2022 till end of December 2022.

2- Implementation phase:-

During the implementation phase patients who fulfilling the requirements for the study were allocated into two groups (Randomly choosing a study and control group).

For both groups: data about patient age, sex, education level, employment, and marital status were recorded from patient's sheet , in addition to medical data as cause of NVUGIB and past history of diseases was assessed using tool I part one to provide base line patient data.

Using tool I part two patients were assessed for Hemodynamic parameter including (temperature, respiration, and pulse rate, SBP, DBP and MBP) and Arterial blood gases reading includes (Ph, Sao2, $PaCO_2$, HCO_3 & Pao2) from first day of ICU admission till 3rd day.

The data about non variceal upper GIT bleeding symptoms and medications used before admission were also assessed using tool I part two to assess criteria for bleeding on admission.

Also using tool I part three patients in both groups assessed for neurological level using GCS score from first day of ICU admission till 3rd day.

For the control group: The control group was exposed to routine care in Gastroenterology intensive care unit as prescribed by the resident physician.

For study group: Implementation of the NVUGIB nursing care protocol (Tool II) (Morton. P.G &Fontaine. K.D, 2013) for the study group was done daily by the researcher from admission till 3rd day which including the following:-

To prevent aspiration of vomit or blood, keep the airway open, raise the head of the bed, and have suction at the bedside.

Give oxygen therapy to patients to treat hypoxia, which can arise from low haemoglobin levels.

Monitor pulse oximetry results.

Examine and note signs and symptoms of shock, such as agitation, weak peripheral pulses, or chilly, pale, or damp skin. Evaluate and record vital signs, urine output, hemodynamic readings, and oxygen saturation (SaO2).

Evaluate and record bowel, lung, and electrocardiographic monitoring.

. Help with the insertion of a pulmonary artery catheter or a central venous pressure (CVP) catheter.

Monitor and record CVP, cardiac output, systemic vascular resistance,

pulmonary artery pressure, and pulmonary artery occlusion pressure.

Maintain IV access and administer IV fluids and blood products as ordered.

Insert a nasogastric tube and lavage as ordered.

Monitor gastric pH; consult with physician about specific pH range and antacid administration.

Administer anti secretory medications as ordered to reduce gastric acid secretion.

Give vasopressin or octreotide as ordered.

Every one to two hours, maintain precise intake and output, and on-demand. Note any emesis, nasogastric drainage, and urine.

Monitor electrolytes, which may be lost with fluids or altered due to fluid shifts, and report abnormal values.

Keep track of and report abnormal results for haemoglobin, hematocrit, red blood cell (RBC) count, PT, PTT, and BUN level. Provide mouth care as needed.

Clarify all procedures to the patient.

Get the patient ready for both diagnostic and therapeutic approaches.

Check the patient for any endoscopy or colonoscopy risks, such as induced bleeding, pulmonary aspiration, infection, and perforation.

Teach the patient the benefits of looking for medical intervention if signs or symptoms of bleeding return.

Encourage smoking stop and avoidance of alcohol.

3- Evaluation phase

During the evaluation phase of the study both control and the research group were assessed for using the assessment sheet each day for three days to ascertain the impact of implementation nursing care protocol used with the research group on outcomes. Also, Tool III (Clinical outcome evaluation tool) used to assess length of stay, re-bleeding, complications occurrence and death risk assessment.

Statistical analysis:

The statistical package for the social science (SPSS) version 26 was used for data entry and analysis. Numbers, percentage means, and standard deviation were used to present the data. Chi-square test was used to show relation between variables. T-test was used to compare mean. P-value considered statistically significant when $p < 0.05$.

Results:

Table (1):- Represents dissemination of the studied groups as regards their demographic characteristics, It was noticed that the mean age in the study group was (45.50±3.72 years) and (44.76±2.88 years) in the control group, there was no significant difference (p=0.329). Also more than half of the patients in both studied subjects were male (55% & 60% respectively) with no significance difference (P=0.651). And the table, showed that (42.5% & 47.5% respectively) of the study and control group were marital status with no significant difference (P=0.759). Concerning level of education it demonstrates that 32.5% in study group were university educated versus 17.5% in the control group. Regarding occupation, about 52.5% of the study group were employed versus 45 % of the routine group with no significant difference (P= 0.502).

Table (2):- Illustrates that most common cause of nonvariceal upper GIT bleeding in both study and control group was peptic ulcer (37.5 % & 32.5 % respectively) with no significant difference (P=0.788). Regarding presence of past medical history the table figures that (45 % & 50% respectively) in both study and control group had Past family history of GIT disease with no significant difference (P=0.502).

Table (3):- Illustrates assessment NVUGIB symptoms, in relation to presenting symptoms about (35%) of study groups were had fresh hematemesis compared with (32.5) in control groups. In relation to symptoms duration, the table showed that about half of both study and control group symptoms lasts for less than 24hours (50 % & 55%respectivel) with no significant difference (P= 0.593). Also about 50% of study group compared with 45% of control group used NSAID (including aspirin) before coming to hospital with no statistical significant difference with (P= 0.892).

Table (4):- Indicates that there was no significance difference on 1st day among both groups, but at 3rd day of study there were statistical significant difference among both subjects in regards to mean reading hemodynamic parameters (T, HR, RR, SBP, DBP &MAP) with p value at (<0.001, 0.044, <0.001, 0.001, 0.028 & <0.001) respectively.

Table (5):- Reveals that no statistical significant difference among studied group subjects regard arterial Blood gases parameter in 1st day, but there was statistical significant difference at 3rd day among both groups.

Table (6):- Reveals no significant difference among both groups in relation to GCS score (p=0.141) in the 1st day, while shows significant difference at 3rd day in GCS score with (p. value <0.001).

Table (7):- In relation to Rockall score, it shows that on 1st day of admission about half of both group subjects were at high risk for mortality (50% & 47.5% respectively) with no statistical difference (p = 0.901), while at 3rd day 52.5% in study group were at low risk for mortality compared to 47.5% in control group were at moderate risk with statistical difference (p = 0.046).

Table (8):- Illustrates that mean length of ICU stay in study group was (3.08±0.27) and in control group was (4.34±0.55) with significant differences (p value <0.001). In relation to death rate the table shows no significant differences (p value 0.556). As regard complications, it demonstrate that Liver failure was most common in both groups and shows no significant differences in all types of complications except for infection occurrence (p value 0.048)

Table (1): Distribution of socio-demographic characteristics of study and control groups (total N=80).

Variables		Study group N = (40)		Control group N = (40)		P. value
		N	%	N	%	
Age	20 < 35 years	12	30	15	37.5	0.868
	35 < 50 years	15	37.5	12	30	
	50 < 65 years	10	25	8	20	
	>65 years	3	7.5	5	12.5	
	Mean ±SD	45.50±3.72		44.76±2.88		0.329
Gender	Male	22	55	24	60	0.651
	Female	18	45	16	40	
Marital status	Single	10	25	9	22.5	0.759
	Married	17	42.5	19	47.5	
	Divorce	5	12.5	7	17.5	
	Widow	8	20	5	12.5	
Level of education	Illiterate	4	10	3	7.5	0.476
	Read and write	9	22.5	10	25	
	Basic education	4	10	8	20	
	Secondary	10	25	12	30	
	University	13	32.5	7	17.5	
Occupation	Unemployed	21	52.5	18	45	0.502
	Employee	19	47.5	22	55	

n.s: P >0.05 non-significant

*: P <0.05 significant

**: P <0.001 moderate significant

***: P <0.000 highly significant

Data described as (n& %) chi-squar test and (mean ± SD independent sample t-test)

Table (2): Frequency of causes of NVUGIB and past medical history among studied subjects (total N=80).

Variables		Study group N = (40)		Control group N = (40)		P. value
		N	%	N	%	
Causes of NVUGIB	Peptic Ulcer	15	37.5	13	32.5	0.788
	Esophagitis	8	20	10	25	
	Gastritis	10	25	7	17.5	
	Mallory-Weiss	4	10	7	17.5	
	Neoplastic lesions	3	7.5	3	7.5	
Past medical history	Diabetes Mellitus	6	15	7	17.5	0.502
	Past family history of GIT disease	18	45	20	50	
	Hypertension	7	17.5	9	22.5	
	Others	9	22.5	4	10	

n.s: P >0.05 non-significant

*: P <0.05 significant

**: P <0.001 moderate significant

***: P <0.000 highly significant

Data described as (n& %) chi-squar test and (mean ± SD independent sample t-test)

Table (3): Frequency distribution of assessment NVUGIB symptoms of studied subjects (total N=80).

Variables		Study group N = (40)		Control group N = (40)		P. value
		N	%	N	%	
Presenting symptoms	Melena	8	20	7	17.5	0.890
	Fresh hematemesis	14	35	13	32.5	
	Coffee ground hematemesis	8	20	11	27.5	
	Both hematemesis and melena	10	25	9	22.5	
Symptom duration	<24hours	20	50	22	55	0.593
	1–7 days	15	37.5	11	27.5	
	>7days	5	12.5	7	17.5	
Medications used before admission	Anticoagulant	5	12.5	6	15	0.892
	NSAID (including aspirin)	20	50	18	45	
	Non	15	37.5	16	40	

n.s: P >0.05 non-significant

*: P <0.05 significant

**: P <0.001 moderate significant

***: P <0.000 highly significant

Data described as (n& %) chi-squar test and (mean ± SD independent sample t-test)

Table (4): Distribution of hemodynamic parameters among studied group subjects (total N=80).

Variables	Days	Study group (40)	Control group (40)	P. value
		Mean± SD	Mean± SD	
Temperature (T)	1st	35.95±0.50	36.08±0.13	0.120
	3rd	37.25±0.28	39.34±0.32	<0.001 **
Heart Rate (HR)	1st	99.24±18.0	101.87±15.58	0.487
	3rd	90.35±10.58	95.47±11.70	0.044*
Respiratory Rate (RR)	1st	27.82±2.26	28.67±3.04	0.161
	3rd	23.32±2.81	26.85±3.60	<0.001 **
Systolic B.P (SBP)	1st	90.36±2.49	89.45±2.85	0.135
	3rd	120.02±5.41	110.98±4.26	<0.001 **
Diastolic B.P (DBP)	1st	53.25±11.45	54.37±13.08	0.689
	3rd	85.68±2.15	81.89±10.46	0.028*
MAP	1st	61.22±6.72	62.67±3.49	0.230
	3rd	70.48±3.78	76.26±2.78	<0.001 **

n.s: P >0.05 non-significant

*: P <0.05 significant

**: P <0.001 moderate significant

***: P <0.000 highly significant

Data described as (n& %) chi-squar test and (mean ± SD independent sample t-test)

Table (5): Association among studied group subjects in regards to arterial Blood gases parameters (ABGs) (total N=80).

Arterial Blood Gases (ABGs)	**Days**	**Study group N = (40)**	**Control group N = (40)**	**P. value**
		Mean ±SD	Mean ±SD	
PH	1st	7.34±0.09	7.37±0.05	0.073
	3rd	7.35±0.07	7.44±0.06	<0.001*
Pao_2	1st	85.98±9.50	84.32±11.53	0.490
	3rd	97.98±7.29	92.32±9.62	0.004*
$PaCO_2$	1st	43.16±6.85	44.82±8.56	0.342
	3rd	40.16±4.71	43.74±5.42	0.002*
HCO_3	1st	25.80±1.82	26.22±1.69	0.289
	3rd	20.00±1.26	23.33±1.31	<0.001*
Sao_2	1st	93.48±3.19	92.44±6.55	0.375
	3rd	98.48±2.21	93.34±6.74	<0.001*

n.s: P >0.05 non-significant

*: P <0.05 significant

**: P <0.001 moderate significant
***: P <0.000 highly significant
Data described as (n& %) chi-squar test and (mean ± SD independent sample t-test)

Table (6): Mean score of overall Glasgow coma score among studied subjects (GCS) (total N=80).

Total GCS score	Study group N= (40)	Control group N= (40)	P. value
	Mean ± SD	Mean ± SD	
1st day	13.00±1.51	12.42±1.85	0.141
3rd day	14.40±0.60	13.54±1.08	<0.001 **

n.s: P >0.05 non-significant
*: P <0.05 significant
**: P <0.001 moderate significant
***: P <0.000 highly significant
Data described as (n& %) chi-squar test and (mean ± SD independent sample t-test)

Table (7): Frequency distribution of Rockall scores for studied groups

Items	**Days**	**Scale score**	**Study group N= (40)**		**Control group N= (40)**		**P. value**
			No.	**%**	**No.**	**%**	
Rockall score	**1st day**	Low risk	5	12.5	4	10	0.901
		Moderate	15	37.5	17	42.5	
		High risk	20	50	19	47.5	
	3rd day	Low risk	21	52.5	11	27.5	0.046*
		Moderate	15	37.5	19	47.5	
		High risk	4	10	10	25	

n.s: P >0.05 non-significant
*: P <0.05 significant
**: P <0.001 moderate significant
***: P <0.000 highly significant
Data described as (n& %) chi-squar test and (mean ± SD independent sample t-test)

Table (8): Distribution of clinical outcomes and complications of studied subjects (N=80).

Variables	Study group (40)		Control group (40)		P. value
	No.	%	No.	%	
Clinical outcomes					
Length of stay					
Less than 3 days	35	87.5	26	65	0.018
More than 3 days	5	12.5	14	35	
Mean ±SD	3.08±0.27		4.34±0.55		<0.001*
Death rate	1	2.5	2	5	0.556
Complications					
Hypovolemic shock	1	2.5	4	10	0.166
Liver failure	2	5	6	15	0.136
Hepatorenal syndrome	1	2.5	5	12.5	0.090
Infection	1	2.5	6	15	0.048*

n.s: P >0.05 non-significant

*: P <0.05 significant

**: P <0.001 moderate significant

***: P <0.000 highly significant

Data described as (n& %) chi-squar test and (mean ± SD independent sample t-test)

Discussion

Acute upper gastrointestinal bleeding (AUGIB) is common, costly, and potentially life-threatening medical emergency and requires prompt assessment and aggressive medical management [17]. UGIB is a frequent medical emergency and a significant contributor to morbidity and mortality. Non-variceal UGIB is primarily brought on by peptic ulcer bleeding. The main risk factors for UGIB include the use of non-steroidal anti-inflammatory medicines (NSAIDs), low-dose aspirin use, and Helicobacter pylori infections [1].

Regarding the socio-demographic characteristics of patients involved in this study, In relation to age the mean age in study group was (45.50±3.72) and for the control group was (44.76±2.88). This finding comes in line with **Mohamed. A.S, et al. 2020[11]** who study Clinical Results for Patients with Haematemesis in the Intensive Care Unit at Alrajhy Liver Hospital and the Impact of Nursing Guidelines and reported that mean age in study group was (46.54±4.72) and for the control group was (43.76±2.98). Concerning gender, the results of the current investigation showed that most of studied patients in research and routine groups were male (55% & 60 % respectively), which supported by a study done by **Junaid Khan, 2018 [18]** who reported that the mean age of the patients was 43.3 ± 13.80. 80 (53.3%) of the patients were male and 70 (46.7%) were females.

From the researcher point of opinion, this finding is related to the great rate of exposure to occupational stressors for males than females, in addition to incidence of smoking is higher in males, which is supported by **Marti-Aguado, D., et al. 2022 [19]** who study Cigarette smoking and liver diseases and address that Cross-sectional and retrospective studies have found increasing evidence that smoking cigarettes slows the development of chronic viral hepatitis. The underlying mechanisms are complex and involve numerous pathophysiological pathways. However, research looking into the development of fibrosis does not always reflect on smoking status.

Concerning comparison between control and study group in relation to causes of acute non- visceral upper gastrointestinal bleeding based on endoscopic findings and presence of past medical history, the current results revealed that most common cause of NVUGIB in both study and control group was peptic ulcer (37.5 % & 32.5 % respectively) with no significant difference. This is similar to results of **Kawaguchi, K., et al. 2017[1],** who study management for non-variceal upper gastrointestinal bleeding in elderly patients, and reported that in his cohort study Gastric ulcers were the most frequent with 206 cases (41%) of UGIT bleeding. In addition, the present study illustrate that nearby half of patients in the research group and half of subjects in routine group were had Past family history of GIT disease (45 % & 50% respectively), and the second common comorbidity was hypertension (17.5% & 22.5% respectively) in both groups. Which come in agreement with study prepared through **[11],** who results showed that about third of studied patients in both groups had Previous family history of hepatic disease (36% & 40% respectively) with no difference,

while come in contrast with[10] who study the Clinical Outcomes and Patient Satisfaction Assessment among Upper Gastrointestinal Bleeding at Qena University Hospital at Upper Egypt, and revealed that the highest percentage of studied patients in study group (66.6%) had past medical history of diabetes mellitus and in the control group (40.7%) had diabetes mellitus, followed by history of chronic liver diseases which represent (26% & 40.7% respectively) in both groups.

Regarding comparison between control and study group in regards to hemodynamic and arterial Blood gases parameters monitoring, the present study indicated that no statistical significant difference was founded among both group subjects in the day of ICU admission but a significant difference was observed in the 3rd day of stay, from the researcher point of view it is related to the application of nursing protocol of care for subjects group with acute Non-variceal upper gastrointestinal bleeding that promote and provide suitable supportive management. This results supported with study prepared by **Shebl, A.M., et al, 2013[20]** who reported the study group saw an increase in systolic blood pressure of more than 100 mmHg and a normalized pulse rate after the administration of nursing intervention when compared to the routine group, when studying clinical outcomes and patient satisfaction as a result of nursing intervention between UGITB .Moreover it was contrasting to research done by **Mohamed, A.S, et al. 2020[11]** who reported that no statistical significant difference was founded among both studied subjects in the day of ICU admission in all parameters, and also on 3rd day except for temperature and mean arterial blood gases.

Considering comparison of Glasgow coma scores among studied subjects, the current results demonstrate significant increase in GCS score in study group at the 3rd day with significant difference between both study and control group (p value <0.001). This agrees with findings of research prepared by **Shebl, A.M., et al, 2013[20]** who indicate that the majority of the study group's patients were awake, which following the use of nursing intervention,

In relation to Rockall score for study and control group, the current results exposed that half of studied subjects were at high score for mortality with no statistical significant difference on 1st day of admission, while on 3rd day more than half of research group subjects were at low risk comparing to control group were near half of patients were at moderate risk with statistical significant difference with (p value 0.046).

Regarding length of ICU stay, the recent study revealed that mean length of stay for research group was (3.08±0.27) and for control group was (4.34±0.55) with statistical significant difference (p value < 0.001), which comes in agreement with study prepared by **Mohamed, A.S, et al. 2020[11]** who reported that mean length of ICU stay was (3.08±0.27 and 4.34±0.55) with p-value (0.004). And in relation to mortality rate the study showed that the rate was higher in control group than study group this can be explained from the researchers points of view that the application of nursing care protocol help to improve patients general condition, hemodynamic, conscious statue that subsequently decrease mortality rate in study group

than control group who exposed to routine hospital care. This agree with **Skok & Sinkovic, 2011** [21] who found that the average length of stay was (2.8+1.9), and in consistent with **Frank, A 2014**[22], who mentions that the average duration of stay for the 240 patients who were the subject of the study was (12.5 ± 5.2) days.

Conclusion:

Based on the results of the current research it has been demonstrated that implementation of nursing care protocol for patients with acute non-variceal upper gastrointestinal bleeding improves patients' clinical outcomes and decrease rate of complication occurrence

Recommendations:

Based on the results findings it recommended that:

Provide the gastroenterology intensive care units with clear, illustrative nursing care protocols and booklets for management of patient with severe non-variceal upper GIT bleeding.

For generalization, conduct this study again with larger sample size and a different government hospital.

References:

1. **Kawaguchi, K., Kurumi, H., Takeda, Y., Yashima, K., Isomoto, H.,** :(2017). Management for non-variceal upper gastrointestinal bleeding in elderly patients: the experience of a tertiary university hospital. Ann Transl Med, 5(8):181.http://dx.doi.org/10.21037/atm.2017.03.103.
2. **Kim, J.S, Kim, B.W, Kim, D.H, Park, C.H, Lee, H., et al: (2020).** Guidelines for Nonvariceal Upper Gastrointestinal Bleeding, Gut and Liver, Vol. 14, No. 5, September, pp. 560-570.
3. **Dewan. KR., Patowary .BS, and Bhattarai. S :(2014).** A study of clinical and endoscopic profile of acute upper gastrointestinal bleeding. Kathmandu Univ Med J. Vol 45, N (1): pp: 21-25. | DOI | PubMed |Google Scholar |
4. **Bhattarai, S. :(2020).** Clinical Profile and Endoscopic Findings in Patients with Upper Gastrointestinal Bleed Attending a Tertiary Care Hospital: A Descriptive Cross-sectional Study. JNMA: Journal of the Nepal Medical Association. 2020 Jun; 58(226):409. | DOI | PubMed | Google Scholar.
5. **Galloro. G, Zullo. A, Luglio. G, Chini. A, Telesca. D. A, Maione. R, Pollastro. M, De Palma. G. D, and Manta. R, :(2022).** Endoscopic clipping in non-variceal upper gastrointestinal bleeding treatment, Clinical Endoscopic; 55:339-346, https://doi.org/10.5946/ce.2021.249 pISSN: 2234-2400 • eISSN: 2234-2443.
6. **Hajiagha Mohammadi AA, Reza Azizi M :(2019).** Prognostic factors in patients with active non-variceal upper gastrointestinal bleeding. Arab J Gastroenterol; 20:23-27.
7. **El-Mohr. A. A, Afify. M. A and Abd El-Aziz. A. :(2020).** Risk stratification of acute upper GI bleeding by Rockall, glascow-blatchford and aims 65 scores, Al-Azhar Med. J.(Medicine),Vol. 49(4), October, 2020, 1905 –1918,DOI: 10.12816/amj.2020.120646, https://amj.journals.ekb.eg/article_120646.html.

8. **Bozkurt. M.A., Peker. K.D., Mustafa Gökhan Unsal. M.U., Yırgın. H., Kahraman.I., & Alış. H :(2017).** The Importance of Rockall Scoring System for Upper Gastrointestinal Bleeding in Long-Term Follow-Up, Indian J Surg VOL 79, N (3):PP:188–191, DOI: https://10.1007/s12262-015-1434-1
9. **Rockall. TA., Logan. RF., Devlin. HB., and Northfield. TC., :(1997).** Influencing the practice and outcome in acute upper gastrointestinal haemorrhage. Steering Committee of the National Audit of Acute Upper Gastrointestinal Haemorrhage. Gut 1997; 41: 606-611 [PMID: 9414965]
10. **Bayumi. H.A :(2016).** Clinical Outcomes and Patient Satisfaction Assessment among Upper Gastrointestinal Bleeding at Qena University Hospital at Upper Egypt, IOSR Journal of Nursing and Health Science (IOSR-JNHS) e-ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 5, Issue 6 Ver. I (Nov. - Dec. 2016), PP 130-139 www.iosrjournals.org
11. **Mohamed. A.S, Abdelaziz. M.A & Mahgoub.A.A, (2020).** Effect of Nursing Guidelines in Clinical Outcomes for Haematemesis Patients on Intensive Care Unit at Alrajhy Liver Hospital, Assiut Scientific Nursing Journal, Vol , (8) No, (22) September, 2020, pp (198 -208), http://asnj.journals.ekb.eg, http://www.arabimpactfactor.com
12. **Ahmed. N.E, Khalil. E.A, Shahin. E.S, Qalawa. S.A :(2021).** Effect of implementing training program regarding care of patients with upper gastrointestinal bleeding nurses knowledge, Port Said Scientific Journal of Nursing, Vol.8, No. 2, June 2021.
13. **Sohag Annual Statistical Records, (2021).** Sohage University Hospital. Egypt
14. **Green, S. M... Cheerio & Laddie: (2011).** Bidding Farewell to the Glasgow Coma Scale. Annals of emergency medicine, Vol 58 no (5) p.p: 427-430.
15. **Ebrahimi Bakhtavar H, Morteza Bagi HR, Rahmani F, Shahsavari Nia K, Ettehadi. A, :(2017).** Clinical Scoring Systems in Predicting the Outcome of Acute Upper Gastrointestinal Bleeding; a Narrative Review. 2017 Emergency. 2017; 5 (1): e36)
16. **Morton. P.G, Fontaine. K.D, (2013).** Acute Gastrointestinal Bleeding, Critical care nusing Aholistic approach, 10th edition, chapter 41, pp 916-920, Copyright © 2013 Wolters Kluwer Health | Lippincott Williams & Wilkins.
17. **Reda, M.A., Montasser, I.F., Saleh, S.A., Hassan, A.M. and Ewis, A.E.I. (2015)**. Prospective Assessment of the Rockall Risk Scoring System in Egyptian Patients with Upper Gastrointestinal Bleeding. Open Journal of Gastroenterology، 5, 66-76. http://dx.doi.org/10.4236/ojgas.2015.56012.
18. **Junaid Khan: (2018).** Management of upper gastrointestinal bleeding MedcClin North Am ; 80:1035.
19. **Marti-Aguado. D., Clemente-Sanchez. A. and Bataller. R., :(2022).** Cigarette smoking and liver diseases, Journal of Hepatology, vol. 77 p.p; 191–205

20. **Shebl, A.M., Mohamed, S.A., Othman, W. NE., :(2013).** Effect of Nursing Intervention on Clinical Outcomes and Patient Satisfaction among Upper Gastrointestinal Bleeding. Journal of Natural Sciences Research, Vol.3, No.8, ISSN 2224-3186 (Paper) ISSN 2225-0921 (Online). www.iiste.org.
21. **Skok P., & Sinkovic A., (2011).** Upper Gastrointestinal Haemorrhage: Predictive Factors of In-hospital Mortality in Patients Treated in the Medical Intensive Care Unit, The Journal of International Medical Research, 2011; 39: 1016 – 1027.
22. **Frank A :(2014).** Intravenous proton pumps inhibitors: an evidence-based review of their use in gastrointestinal disorders.Drugs.69:435.