

Background

- Severe gastrointestinal (GI) bleeding in children could lead to hemodynamic instability and admission to the pediatric intensive care unit (PICU).
- Apart from vasoactive drugs and therapeutic endoscopy, proton pump inhibitors (PPIs), particularly omeprazole, are routinely used in the pediatric care setting to control GI bleeding.
- Our aim in this study was to assess the efficacy, safety and appropriate dosing regimen of continuous IV omeprazole infusion in children with GI bleeding.

Objectives

- Primary Outcomes:**
 - Comparing PICU length of stay (LOS).
 - Assessing efficacy in stopping GI bleeding.
- Secondary Outcomes:**
 - Assessing rebleeding rates after discontinuing therapy.
 - Capturing daily trends in hemoglobin levels.
 - Determining transfusion requirements.

Methods

- Study Design:** A retrospective cohort chart-review study.
- Inclusion Criteria:** Children between one month and 14 years with GI bleeding, were admitted to PICU at King Faisal Specialist Hospital & Research Centre from January 1, 2017, to September 30, 2022.
 - Patients receiving omeprazole continuous IV infusion for ≥ 24 hours were included in the omeprazole group. The control group included patients receiving other alternative therapies.
- Exclusion Criteria**
 - Patients who are < 1 month old, > 14 years old
 - Received their therapy through a non-intravenous route.
 - Received prophylactic treatment with no evidence of GI bleeding.
 - Patients with incomplete medical records.
- Statistical Analysis:**
 - Chi-square test was used to compare categorical variables and the results were presented as frequencies (percentages).
 - T-test or Mann-Whitney U-test was performed to compare continuous data, depending on data distribution and reported as mean (standard deviation) or median (interquartile range).

Results

Table (1): Patients' demographics at PICU admission

Variable	Treatment group (n= 22)	Control group (n= 59)	p-value
	Number (%) Mean \pm SD		
Age at ICU Admission (years)	7.87 \pm 4.26	5.76 \pm 4.21	0.055
Weight * (kg)	19.35 (13.43)	15 (12)	0.083
BMI (kg/m ²)	14.75 \pm 3.31	15.52 \pm 3.30	0.35
Sex			
Male	14 (55.9)	33 (63.6)	0.53

*Median (IQR)

Figure (1): Type of GI bleeding (%)

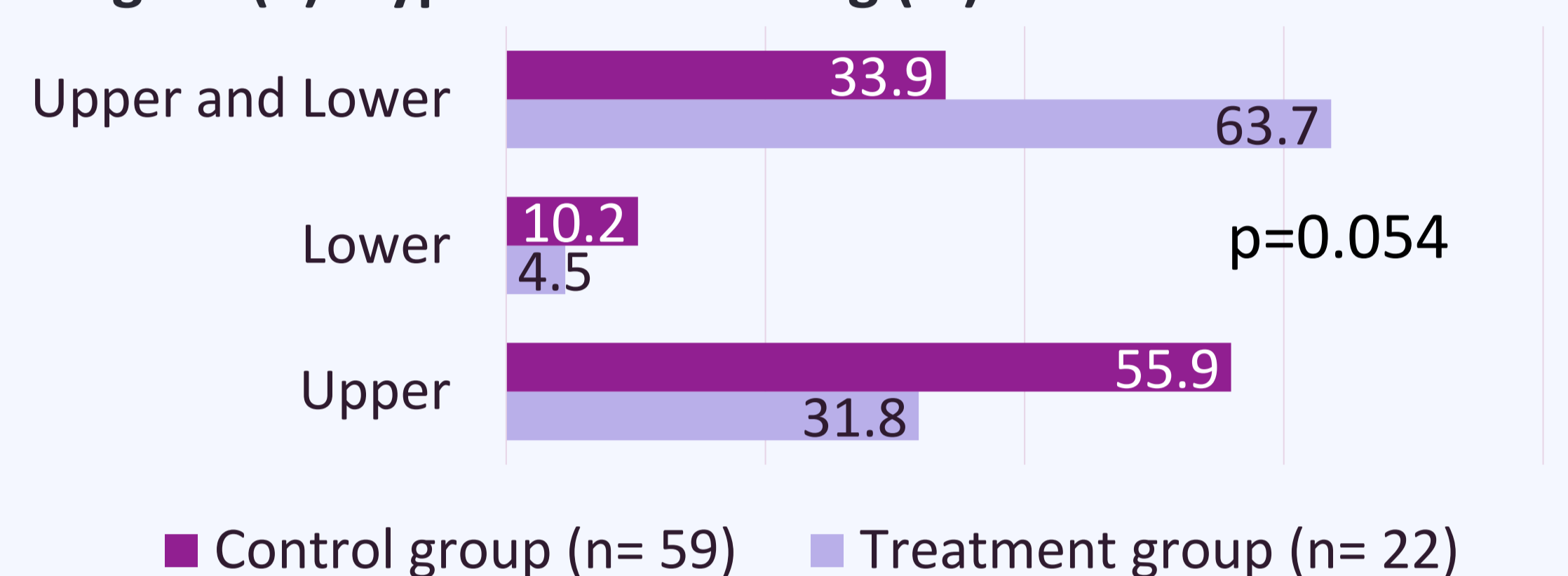
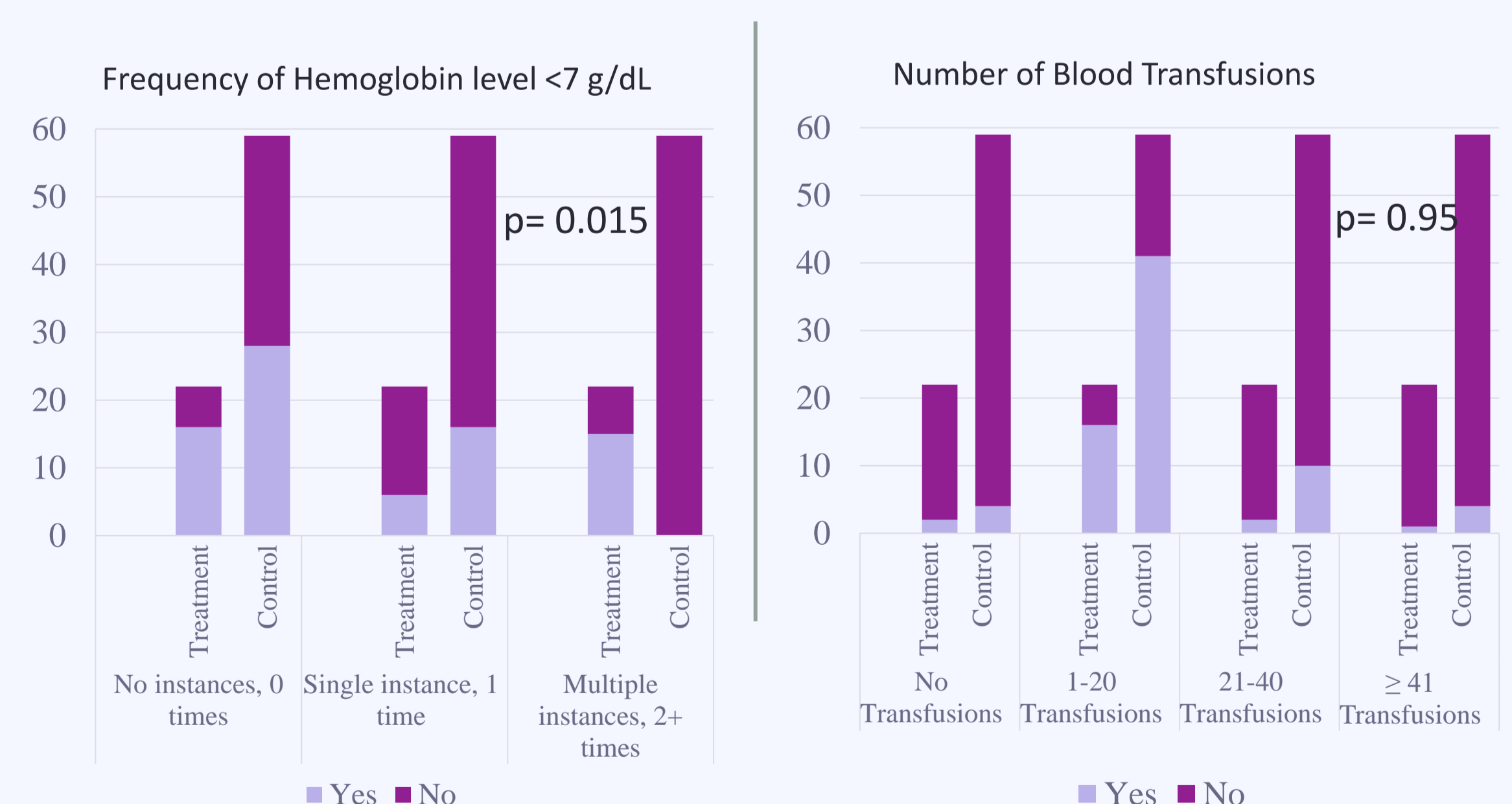


Table (2): Treatment and control groups outcomes

Outcomes	Treatment group (n= 22)	Control group (n= 59)	p-value
	Number (%) Median (IQR)		
Primary Outcomes			
PICU LOS (days)	18.5 (13.75-36.5)	8 (3-20)	<0.001
Length of Bleeding (days)	10.5 (6-19.25)	4 (1-7)	<0.001
Secondary Outcomes			
Rebleeding	2 (9.1)	7 (11.9)	0.724
Enteric Infections	0 (0)	1 (1.7)	0.54
Nausea and Vomiting	2 (9.1)	15 (25.4)	0.14
Hypomagnesemia (Mg < 0.7 mmol/L)	13 (59.1)	44 (74.6)	0.18
Additional Outcome			
Mortality Rate	16 (72.73)	56 (94.92)	0.005

Figure (2): Impact of GI bleeding on haemoglobin and blood transfusions



Conclusion

The findings of our study affirm the safety and tolerability of omeprazole continuous IV infusion, proposing it as a promising option for managing GI bleeding in critically ill pediatric patients. Further studies are warranted to establish optimal dosing and long-term effects of omeprazole continuous infusion within this population.

References

