*Sahel Journal of Life Sciences FUDMA (SAJOLS)*
**September 2025 Vol. 3(3): 333-335**
**ISSN: 3027-0456 (Print)**
**ISSN: 1595-5915 (Online)**
**DOI: *https://doi.org/10.33003/sajols-2025-0303-43***

## *Case Report*

# Tranexamic Acid (TXA) Successfully used to Manage Gastrointestinal Bleeding in a 6-Year-Old Nigerian Boy

***Yahya Aishatu Muhammad[1], Abubakar Abdullahi[2], Abdurrahman Bin Usman[2] and Bilkisu Umar Saad[2]**

**[1]Department of Pediatrics, Faculty of clinical sciences, North West University Kano, Nigeria**
**[2]Department of Paediatrics Goldfish Sea Hospital, Kano, Nigeria**
****Corresponding Author's email*: aishayahya35@yahoo.com**

**ABSTRACT**
Tranexamic acid (TXA) is an antifibrinolytic agent that controls bleeding by preventing the breakdown of fibrin blood clots. Some studies have shown that TXA can reduce rebleeding and bleeding control failures in patients with gastrointestinal bleeding, but its effectiveness and safety are still being debated. This is a case report of the successful management of gastrointestinal bleeding in a 6-year-old boy using TXA.

**Keywords:** Gastrointestinal bleeding; Haematemesis; Haematochezia; Kano; Paediatric

**Citation**: Muhammad, Y.A., Abdullahi, A., Usman, A.B., & Saad, B.U. (2025). Tranexamic Acid (TXA) Successfully used to Manage Gastrointestinal Bleeding in a 6-Year-Old Nigerian Boy. *Sahel Journal of Life Sciences FUDMA*, 3(3): 333-335. DOI: *https://doi.org/10.33003/sajols-2025-0303-43*

## INTRODUCTION

Gastrointestinal (GI) bleeding is potentially lethal in paediatric patients (Liguori *et al.,* 2020), Romano *et al*., 2019) it requires immediate and effective management to avoid high morbidity and mortality. Tranexamic acid (TXA), is an antifibrinolytic agent, which has been shown to reduce bleeding and improve outcome in different clinical settings (CRASH-2 TRIAL, 2010), (Shakur *et al*., 2017). In children TXA has been used for different bleeding conditions like trauma and post tonsillectomy hemorrhage (Robb *et al*., 2014). Gastrointestinal bleeding in children usually present with Haematemesis, melena, haematochezia, abdominal pain, pallor, weakness, dizziness due to blood loss and tachycardia. Mild and moderate bleeding lead to significant symptoms; while severe bleeding can cause life-threatening shock, hypotension and life-threatening complications (Kammermeier *et al*., 2017).

### Epidemiology

The epidemiology of GI bleeding among children varies with age, gender, aetiology and geographic location. Goldfish Sea Hospital is located at Rijiyar Zaki Quarters in Gwale Local Government Area, Kano metropolis. Most of the patients that attend the hospital are children. Kano state lies between latitude $13^0$ North and longitude $8^0$ West. It is one of the 36 states in Nigeria, made up of 44 local government areas and a total land area of 20,760 square kilometers (National Bureau of Statistics, 2006). The state is the most densely populated in Nigeria with a population of approximately 9.4 million people, 45% of the population being less than 15 years, according to the 2006 census estimate. It is also the Nigeria's leading industrial and commerce area. The indigenes are mainly Hausa and Fulani who live in the ancient city of Kano; while the newer areas of the city such as Sabongari are populated by foreign nationalities and other Nigerians of varied ethnicity including Igbo, Yoruba, Tiv and Igala. The people of Kano state are mainly traders, farmers and civil servants. (National Bureau of Statistics 2006). Gastrointestinal bleeding is a relatively rare condition in children with an incidence of 1-2% (Pant *et al*., 2014). There are documented data on prevalence of some pediatric conditions studied in Kano, Nigeria such as skin conditions (Yahya, 2022), and Human Immunodeficiency virus infection (Obiagwu *et al.,* 2013). Obtaining specific references for prevalence of Gastrointestinal bleeding among children in Kano, Nigeria is challenging because of limited data. Family history of GI bleeding or inflammatory bowel disease (Bouhuys *et al.,* 2023) and use of certain medications

like non-steroidal anti-inflammatory drugs (opeez-Vicent *et al*., 2020) increase the risk of GI bleeding in children. Among neonates GI bleeding is mostly caused by swallowed maternal blood, Vitamin K deficiency or necrotizing enterocolitis (Patric J *et al.,* 2023). While among infants and toddlers the common causes include infections, intussusception and allergic proctocolitis (Bouhuys *et al*., 2023). However Inflammatory bowel diseases can also lead to GI bleeding in children (Kammermeir *et al*., 2017).

## CASE REPORT

A 6years old boy was referred to Goldfish Sea Hospital Kano from Isyakarabiu Paediatric Hospital Kano on account of lack of bed space with history of fever for one-week, abdominal pain and swelling for five days, haematemesis and frank bleeding per rectum for three days and generalized body weakness for one day with in ability to walk unsupported. He was given several medications at home before reporting to the hospital including non-steroidal anti-inflammatory drugs and some traditional medications. No family history of similar illness and no history of similar occurrence in the past from the area. He was not a sickle cell anaemic patient and no family history of sickle cell anaemia or bleeding abnormality. He is the $6^{th}$ out of eight children of both parents in a monogamous setting. The father was a trader, while the mother was unemployed.

On arrival at the hospital, the boy was found to be acutely ill-looking, febrile ($39.8^0$c), pale, anicteric, a cyanosed and in respiratory distress. Abdominal examination revealed a moderately distended abdomen, soft, with an enlarged spleen of 6cm below the costal margin, liver span was 5cm which was not enlarged, the kidneys were not ballotable. Cardiovascular system examination showed pulse rate of 160 beats per minute, regular, moderate volume. Blood pressure was 100/ 60mmhg, Apex beat was at $5^{th}$ left intercostal space mid axillary line, heart sounds were $S_1S_2S_3$ with grade 3 haemic murmur. Respiratory system examination showed a respiratory rate of 60 cycles /minute, no obvious chest wall deformity, percussion note was resonant and there was good air entry bilaterally with vesicular breath sounds and no added sounds. Central nervous system examination showed a drowsy child with no obvious cranial nerve palsy, power was 3/5 on both lower limbs, tone and reflexes were normal all the limbs. Complete blood counts showed, haemoglobin of 4.9g/dl; white blood cell count 15,750/$mm^3$, platelet count two hundred and eighty thousand per cubic millimeter, Blood coagulation profile (Prothrombin time, partial thromboplastin time, and international normalized ratio) were within normal ranges. Biochemical laboratory analyses were performed which included urea, electrolyte, creatinine, liver function tests and were all within normal ranges. Urinary blood and red blood cells were positive and occult blood in stool was positive, no parasites were seen during stool microscopy. Malarial parasite rapid diagnostic test was reactive. Diagnosis of acute GI bleeding secondary to sepsis with anaemia and malaria was made. Surgical abdomen was excluded and the child was transfused with fresh whole blood. He was also placed on Nil per os, proton pump inhibitor (intravenous omeprazole 1mgl/kg daily), intravenous Artesunate 30mg at 0, 12 and 24 hours, then 30mgs daily, Intravenous ciprofloxacin 10mg/kg/dose 12 hourly, intravenous metronidazole 7.5mg/kg 8 hourly, intravenous Vitamin K. Vital signs were closely monitored. After 72hours the patient was still bleeding per rectum even though the haematemesis has subsided. Tranexamic acid injection 15mg/kg was administered slowly over 10-15minutes in 5ml /kg of 0.9% normal saline and the second dose was administered 8 hours after the first dose. After administering the Tranexamic acid, the bleeding stopped and within 48hours the patient was commenced on oral sips. After one week on admission the patient's condition was stable with no bleeding, no abdominal pain, and the splenic enlargement has regressed. The bleeding did not recur on follow-up one month after discharge.

## DISCUSSION

Gastrointestinal bleeding in children is an emergency and can be life-threatening Early diagnosis and prompt treatment can reduce mortality. There are different causes of GI bleeding including infections, coagulopathies, structural abnormalities, drug-induced drug -mucosal injury (Seyed *et al*., 2018). In this case, the child presented with haematemesis, frank rectal bleeding and severe anaemia associated with fever and presence of enlarged spleen. Associated use of non-steroidal anti-inflammatory drugs (NSAIDS) as well as use of traditional medications might have contributed to mucosal injury and bleeding, consistent with known adverse effects of NSAIDS on gastrointestinal tract in children (Seyed A *et al.,*2018).

The initial management which included blood transfusion, nil per os, use of antibiotics, anti-malarial treatment, and use of proton pump inhibitor are part of the standard supportive management required for all cases of GI bleeding especially among children (Rockey DC *et al*., 2010). However, despite the above measures taken the child continued to bleed which necessitate the team to consider using TXA injection.

Tranexamic acid is an antifibrinolytic agent that competitively inhibits the activation of plasmin, thereby stabilizing clot formation and reducing bleeding (Shakur *et al*., 2017). The efficacy of TXA is well established in cases of trauma and obstetric bleeding but its role in treatment of gastrointestinal bleeding is under investigation. A study done in 2020 known as the HALT-IT trial done among adult population did not show any significant improvement in mortality in people with GI bleeding and was said to be associated with increased risk of seizure disorder and thromboembolic phenomenon (Robers *et al*., 2020). But there is limited evidence among paediatric patients. Few case series have even demonstrated its benefits in control of bleeding when other measures fail in pediatrics (Ahlam, 2022).

In this patient, intravenous TXA was given which led to the cessation of the GI bleeding and stabilization of the patient without recurrence of haemorrhage one month follow-up. Above is a favorable outcome supporting the previous reports of its benefits in reducing transfusion requirements and control of bleeding without causing significant side effects (Lee *et al*., 2019) Importantly the absence of thromboembolic complications in this patient highlights the relative safety of TXA when used judiciously.

This case underscores the potential benefit of TXA as an adjunct therapy in paediatric GI bleeding, especially in resource limiting settings where endoscopic and surgical intervention may be delayed or unavailable. Nevertheless, the absence of paediatric trials means that caution is required, and TXA should be considered only after other treatment measures available have been used and a need for close monitoring for side effects when using it is required.

## CONCLUSION

Tranexamic acid (TXA) injection was used to successfully stop gastrointestinal bleeding in a 6years old boy. This case report adds to the growing body of evidence supporting its selective use in refractory paediatric cases. Further studies, including randomized controlled studies among paediatric group is necessary to establish the safety and optimal dosing of TXA in GI bleeding.

## REFFERENCES

Abdulkarim HA, Adel Mansour A, Fayez Judaya F *et al.* Effective management of acute gastrointestinal hemorrhage: Current approaches for pharmacists, emergency medical services, and updated role of health information. International Journal of Health Sciences. March 2025

Ahlam M. Tranexamic Acid Use for Massive Hemoptysis in a Child: A case report. *Cureus* 2022; 14(8).

Patrick R, LaToya J, Muhammad A. Gastrointestinal bleeding in the Neonates: Updates on Diagnostics, Therapeutics, and Management. *NeoReviews* July 2023, 24(7): e403-e413**.**

Bouhuys. M, Lexmond W.S, van Rheenen, P.F(2023). Pediatric Inflammatory Bowel Disease. *Pediatrics*, 151(1).

Roberts, I., Shakur, H., Coats, T., *et al*. The CRASH-2 trial: a randomized controlled trial and economic evaluation of the effects of tranexamic acid on death, vascular occlusive events and transfusion requirement in bleeding trauma patients. *Health Technol Assess*. 2013 Mar;17(10):1-79.

Rockey DC. Occult and obscure gastrointestinal bleeding: causes and clinical management. Nat Rev Gastroenterol Hepatol. 2010;7(5):265-79.

Seyed AJ, Muhammad AK, Hamid RK *et al.* Etiology of gastrointestinal bleeding in children referred to pediatric wards of Mashhad hospitals, Iran. Electronic Physician 2018 February 25;10(2):6341-6345.

Robb PJ, Thorning G. Perioperative tranexamic acid in day-case paediatric tonsillectomy. *Ann R Coll Surg Eng*l. 2014 March; 96(2):127-129.

Kammermeir, J., Dziubak R., Pescarin, M., *et al.*2017. Phenotypic and genotypic characterization of inflammatory bowel disease presenting before the age of 2 years. *Journal of Crohns and Colitis* 2017; 11(1), 60-69.

Liguori, G. Gastrointestinal bleeding in children: A review of the literature. *Journal of Pediatric Gastroenterology and Nutrition* .2020; 70(3), 342-348.

Obiagwu PN, Hassan-Hanga F, Ibrahim M. Pediatric HIV in Kano, Nigeria. *Niger J Clin Pract.* 2013; 16: 521-5.

Pant, C., Sankararaman, S., Deshpande., A *et al*. Gastrointestinal bleeding in hospitalized children in the United States. Current Medical Research and Opinion 2014;30(6):1065-9.

Vincent, J., Sakr, Y., Sprung, C., *et al*. Sepsis Occurrence in Acutely III Patients Investigators. Sepsis in European intensive care units: results of the SOAP study. Crit Care Med. 2006 Feb;344-53.

Yahya, A. Prevalence and Pattern of Paediatric dermatoses among children in Aminu Kano teaching Hospital Kano, Nigeria. *ActaBiomedica*,2022;11;93(2).