



Association of Over-the-Counter Nospamin and Gripe Water Use with Spontaneous Intestinal Perforation in Neonates: A Case Series

Lawal Abdulwahab¹, Jimoh Abdulrasaq¹, Sayomi Olayinka¹, Ofozor Kenneth¹, Abe Tolulope¹, Jimoh Nasiru¹, Ahmed Mahmud¹, Chijioke Chijindu, Ahmed Kawthar¹, Oluyole-Jimoh Sekinat², Alabi Esther², Adedeji Nafisat², Awoyale Oladayo³, Nakamyuka Rashidah⁴, Ariyibi Solomom², Abdulraheem Nurudeen¹, Nasir Abdulrasheed¹, Abdur-Rahman Lukman¹

Correspondence: Lawal Abdulwahab Oluwatomisin, abdulwahablawal007@gmail.com

Abstract

Introduction: Spontaneous intestinal perforation in newborns, often seen in the terminal ileum, is linked to risk factors such as prematurity, low birth weight, and drug exposure. Over-the-counter use of medications like Nospamin (an anticholinergic) and gripe water (an herbal supplement) for infantile colic is common, especially in developing countries, raising concerns about their potential role in gastrointestinal complications.

Methods: This retrospective case series describes five neonates presenting with intestinal perforation following exposure to Nospamin and/or gripe water. All cases were managed at the University of Ilorin Teaching Hospital over a 12-month period. Clinical assessment, blood work, imaging, and, when indicated, exploratory laparotomy were performed. Interventions included resuscitation, nasogastric decompression, and, where necessary, surgical repair.

Results: The neonates, with an average age of 8.4 days at presentation, showed abdominal distension, fever, and feeding refusal. Imaging confirmed intestinal perforation in all cases. Three neonates underwent successful perforation repair; one neonate improved with conservative management, while another succumbed to hepatic failure and multiple organ dysfunction syndrome. The observed link between Nospamin/gripe water exposure and perforation onset warrants further investigation.

Discussion: The cases suggest a possible association between self-medication with Nospamin and gripe water and neonatal intestinal perforation. These findings highlight the need for public education on the risks of unsupervised medication use in neonates.

¹Department of Surgery, University of Ilorin Teaching Hospital, Ilorin, Nigeria.

²Department of pediatric and child health, University of Ilorin Teaching Hospital, Ilorin, Nigeria.

³Kwara State Ministry of Health, Nigeria

⁴Department of Pharmacology, Makerere University, Uganda

Cite as: Lawal, A., jimoh, A., Sayomi, O., Ofozor, K., Abe, T., Jimoh, N., ... Lukman, A.-R. Association of Over-the-Counter Nospamin and Gripe Water Use with Spontaneous Intestinal Perforation in Neonates: A Case Series. *Impact Surgery*, 2(1), 46–48. <https://doi.org/10.62463/surgery.122>



Introduction

Spontaneous intestinal perforation in newborns typically involves a single perforation in the bowel wall, often on the antimesenteric border of the terminal ileum, although other locations, such as the jejunum and colon, are possible.¹⁻² While the precise cause is unclear, identified risk factors include prematurity, low birth weight, and both prenatal and neonatal drug exposure, especially indomethacin and corticosteroids.³⁻⁴ Indomethacin is known to cause mesenteric vasoconstriction, while the combined prenatal and postnatal use of glucocorticoids and indomethacin has been linked to altered nitric oxide production, leading to intestinal vulnerability.⁵⁻⁶ This condition may be exacerbated by self-medication, a practice common in developing countries, where caregivers frequently administer over-the-counter drugs for infant colic.⁷⁻⁹

In this context, we report a series of neonates exposed to the anticholinergic medication Nospamin and the herbal supplement gripe water, both often misused for colic relief, who subsequently developed intestinal perforation. This report is based on cases managed at the University of Ilorin Teaching Hospital over a 12-month period in 2023.

Methods

This case series includes five neonates admitted for suspected spontaneous intestinal perforation. Each case involved a history of Nospamin and/or gripe water exposure for supposed colic symptoms. Patients presented with abdominal distension, fever, and refusal of feeds. Diagnostic evaluations included physical examinations, blood counts, and imaging studies, revealing free air indicative of perforation. Based on clinical and radiological findings, patients received initial resuscitation with intravenous fluids, nasogastric decompression, and, when necessary, urethral catheterization. Surgical interventions included emergency exploratory laparotomies for three neonates, while one case was managed non-operatively following symptom improvement. Cases were followed up postoperatively, and albendazole was administered as a precautionary deworming measure.

Results

All five neonates presented with symptoms following exposure to Nospamin and/or gripe water. Clinical findings and imaging confirmed intestinal perforation, with surgical exploration revealing single perforations in the terminal ileum. The average age at presentation was 8.4 days, with symptoms emerging approximately four days post-exposure. Three neonates underwent simple repair of the perforation, with good postoperative recovery. One neonate,

however, developed complications of hepatic failure and multiple organ dysfunction syndrome (MODS) and succumbed on postoperative day four. Another neonate with a milder presentation improved on conservative management and was discharged.

Discussion

The similarity of presentation across these cases raises concerns about the potential role of Nospamin and gripe water in predisposing neonates to spontaneous intestinal perforation. Previous research has highlighted the risk of intestinal perforation in neonates exposed to medications such as NSAIDs and corticosteroids.⁵⁻⁶ The pattern observed in these cases suggests that self-medication with Nospamin and gripe water may contribute to similar adverse effects. Infant colic, which affects a considerable percentage of newborns globally, often resolves without intervention.¹⁰⁻¹⁶ However, caregiver anxiety frequently leads to overuse of medications like Nospamin and gripe water, which are perceived as safe due to their long-standing use.^{7,14} Gripe water's unregulated composition, including potentially harmful ingredients, and Nospamin's anticholinergic properties may pose serious health risks, including gastrointestinal side effects such as constipation and potential intestinal perforation.^{1,17-19}

Community beliefs about these drugs' safety often mask their adverse effects, particularly in developing regions where healthcare access may be limited and adverse events underreported. Some cases of perforation may even resolve spontaneously, as observed in one of our cases, further obscuring the true prevalence of drug-induced complications. Our findings underscore the urgent need for awareness campaigns and stricter regulations to prevent over-the-counter misuse and ensure caregivers are better informed about the risks of unprescribed medication in neonates.

While drugs like indomethacin and corticosteroids are established risk factors for neonatal intestinal perforation, this case series suggests that over-the-counter use of Nospamin and gripe water could present similar risks. Further research is warranted to clarify the mechanisms of drug-induced neonatal intestinal perforation and to implement preventative strategies, including public education to reduce self-medication in vulnerable populations. Community sensitisation and regulatory oversight are essential to mitigate the health risks posed by these widely used but potentially harmful treatments.

References

1. Krishnan P, Lotfollahzadeh S. Spontaneous intestinal perforation of the newborn. *StatPearls* [Internet]. Treasure Island (FL): StatPearls Publishing; 2023 Jan-. [Updated 2023 Jun 3]. Available from: <https://www.ncbi>



nlm.nih.gov/books/NBK585031/

2. Holland AJ, Shun A, Martin HC, Cooke-Yarborough C, Holland J. Small bowel perforation in the premature neonate: congenital or acquired? *Pediatr Surg Int.* 2003;19:489–94. doi:10.1007/s00383-003-0967-8.
3. Ragouilliaux CJ, Keeney SE, Hawkins HK, Rowen JL. Maternal factors in extremely low birth weight infants who develop spontaneous intestinal perforation. *Pediatrics.* 2007;120:64. doi:10.1542/peds.2006-2804.
4. Nakajima Y, Masaoka N, Yamamoto T. Obstetrical risk factors for focal intestinal perforation in very low birth weight infants. *J Perinat Med.* 2011;39:179–84. doi:10.1515/jpm.2010.129.
5. Baud O, Trousson C, Biran V, et al.; PREMILOC Trial Group. Association between early low-dose hydrocortisone therapy in extremely preterm neonates and neurodevelopmental outcomes at 2 years of age. *JAMA.* 2017;317:1329–37. doi:10.1001/jama.2017.2692.
6. Kandragu H, Kanungo J, Lee KS, et al.; Canadian Neonatal Network (CNN), Canadian Preterm Birth Network (CPTBN) Investigators. Association of co-exposure of antenatal steroid and prophylactic indomethacin with spontaneous intestinal perforation. *J Pediatr.* 2021;235:34–41.e1. doi:10.1016/j.jpeds.2021.03.012.
7. Oshikoya KA, Senbanjo IO, Njokanma OF. Self-medication for infants with colic in Lagos, Nigeria. *BMC Pediatr.* 2009;9:9. doi:10.1186/1471-2431-9-9.
8. Makwela MS, Maimela E, Bopape MM, Mashaba RG. The use of non-prescribed medicines in infants from birth to six months in rural areas of Polokwane Municipality-Limpopo Province, South Africa. *Children (Basel).* 2024;11:434. doi:10.3390/children11040434.
9. Bagherian B, Mehdipour-Rabori R, Nematollahi M. How do mothers take care of their infants with colic pain? A mixed-method study. *Ethiop J Health Sci.* 2021;31:761–70. doi:10.4314/ejhs.v31i4.10.
10. Savino F. Focus on infantile colic. *Acta Paediatr.* 2007;96:1259–64. doi:10.1111/j.1651-2227.2007.00428.x.
11. Leung AK, Lemay JF. Infantile colic: a review. *J R Soc Health.* 2004;124:162–6. doi:10.1177/146642400412400407.
12. Mustafa M, Kariri TM, Majrabi RQ, et al. Mothers' perceptions and attitudes about infantile colic in Jazan, Saudi Arabia. *Cureus.* 2023;15. doi:10.7759/cureus.48210.
13. Al-Shehri H, Al-Mogheer BH, Al-Sawyan TH, et al. Assessment of maternal knowledge about infantile colic in Saudi Arabia. *Electron Physician.* 2016;8:3313–7. doi:10.19082/3313.
14. Chinawa JM, Ubesie AC, Adimora GN, et al. Mothers' perception and management of abdominal colic in infants in Enugu, Nigeria. *Niger J Clin Pract.* 2013;16:169–73. doi:10.4103/1119-3077.110135.
15. Lucassen PLBJ, Assendelft WJ, van Eijk JT, et al. Systematic review of the occurrence of infantile colic in the community. *Arch Dis Child.* 2001;84:398–403. doi:10.1136/adc.84.5.398.
16. Holm LV, Jarbøl DE, Christensen HW, et al. The effect of chiropractic treatment on infantile colic: study protocol for a single-blind randomized controlled trial. *Chiropr Man Therap.* 2018;26:17. doi:10.1186/s12998-018-0188-9.
17. Jain K, Gunasekaran D, Venkatesh C, Soundararajan P. Gripe water administration in infants 1–6 months of age: a cross-sectional study. *J Clin Diagn Res.* 2015;9–8. doi:10.7860/JCDR/2015/13727.6738.
18. Adhisivam B. Is gripe water baby-friendly? *J Pharmacol Pharmacother.* 2012;3:207–8. doi:10.4103/0976-500X.95544.
19. Public health Nigeria. Nospamin drops: Uses, dosage, side effects. 2022. Available from: <https://www.publichealth.com.ng/nospamin-drops-uses-dosage-side-effects/>.
20. Al Qahtani AM, Ahmed HM. The effect of educational program for new mothers about infant abdominal massage and foot reflexology for decreasing colic at Najran City. *Compr Child Adolesc Nurs.* 2021;44:63–78. doi:10.1080/24694193.2020.1740827.