Health Frontiers
A Multidisciplinary Journal for Health Professionals
TARQABIN NUSANTARA GROUP
Health Frontiers: A Multidisciplinary Journal for Health Professionals, Vol 2 Issue 1 2024 E-ISSN : 3024-9740

Effects Of Laxatives On Postoperative Intestinal Sound Recovery

Eko Sari Wahyuni*, Rudi Hamarno, Taufan Arif , Erlina Suci Astuti, Rossyana Septiasih

Department of Nursing, Poltekkes Kemenkes Malang, Malang, Indonesia

E-mail: ekosariwahyuni@poltekkes-malang.ac.id.

ABSTRACT

Intestinal sound is produced by muscle movements in the digestive tract. The return of intestinal sound after surgery is an important indicator for patients to return to eating and drinking normally. This study aimed to determine whether the administration of laxatives before surgery can speed up the recovery of intestinal sound in patients undergoing surgery with general anesthesia. The study involved 30 patients divided into two groups: a laxative group and a control group. The laxative group received laxatives before surgery, while the control group did not. Intestinal sound recovery time was measured in both groups. The sampling technique uses purposive sampling with the Mann Whitney statistical test. The results showed that the administration of laxatives before surgery had a significant effect on intestinal sound recovery time in postoperative patients under general anesthesia ($p < 0.05$). The laxative group showed faster recovery of intestinal sound than the control group. From this study it can be concluded that the administration of pre-operative laxatives can be beneficial for postoperative patients under general anesthesia to accelerate the recovery of bowel function. So that suggestions to the next researcher are advised to conduct research respondents who are given more varied laxatives.

KEYWORDS

Bowel recovery, general anesthesia, intestinal sound, preoperative laxatives

Received: 3 March 2024
Revised: 20 June 2024
Accepted: 25 June 2024

How to cite: *Wahyuni, Eko Sari et al. (2024). Effects Of Laxatives On Postoperative Intestinal Sound Recovery. Heal Front A Multidiscip J Heal Prof. 2(1): 1-7.*

Health Frontiers
A Multidisciplinary Journal for Health Professionals
TARQABIN NUSANTARA GROUP
Health Frontiers: A Multidisciplinary Journal for Health Professionals, Vol 2 Issue 1 2024 E-ISSN : 3024-9740

INTRODUCTION

Surgery is a medical action that aims to improve the patient's health condition by opening the body part to be handled (Suprapti et al., 2023). Surgery can be classified into two types, namely major and minor surgery. Major surgery is a complex and high-risk procedure, while minor surgery is simpler and low-risk (Goyal, 2020).

Before surgery, the patient must undergo several preparations, including mental, physical, and administrative preparations (Ningrum et al., 2020). One important physical preparation is to maintain fluid and electrolyte balance, reduce the risk of surgical wound infection, and empty the contents of the stomach and intestines (Rahmadina et al., 2023). Giving laxatives before surgery is one way to empty the contents of the intestine (Zhou & He, 2020). This aims to prevent fecal contamination to the surgical area and reduce the risk of postoperative infection. However, not all patients need to be given laxatives (Joshi, 2021). Patients who are allergic to laxative drugs or are severely dehydrated are not recommended to use this drug (Dudi-Venkata, 2021).

General anesthesia is a drug used to render a patient unconscious during surgery (Krishnamurti, 2020). This anesthesia works by suppressing the central nervous system, including the autonomic nervous system that controls digestive function (He et al., 2022). As a result, general anesthesia can cause relaxation of the smooth muscle of the intestine and slow or stop peristalsis (Liew et al., 2023). This can lead to weak or even inaudible intestinal noise (Bibby et al., 2023).

Previous research has shown that bowel sound recovery time in postoperative patients under general anesthesia can vary (Sitepu et al., 2021). This study aims to determine whether the administration of laxatives before surgery can accelerate the recovery of intestinal sound in postoperative patients under general anesthesia. By knowing the effect of giving laxative drugs, it is expected to help doctors and nurses in providing more optimal care for postoperative patients.

MATERIALS AND METHODS

This study used a cross-sectional analytical approach with cause or risk variables of laxative administration and variable consequences or effects, namely the recovery of intestinal peristalsica which was measured and collected only once at a time (at the same time). The population used is all postoperative patients with general anesthesia. The sample used was 30 respondents divided into 15 people given laxatives and 15 people were not given laxatives. The sampling technique used is purposive sampling. Data processing and analysis using SPSS with Mann Whitney test.

RESULTS

The results of the univariate analysis of this study can be seen in the following table:

Table 1. Distribution Based on Average Bowel Sound Recovery Time

Intestinal noise recovery time (minutes)	Min	Max
Respondents given laxatives (minutes)	15	30
Respondents who were not given laxatives (minutes)	30	45

Health Frontiers
A Multidisciplinary Journal for Health Professionals
TARQABIN NUSANTARA GROUP
Health Frontiers: A Multidisciplinary Journal for Health Professionals, Vol 2 Issue 1 2024 E-ISSN : 3024-9740

Table 1 shows that intestinal noise recovery time in patients given laxatives appeared faster on average at 15 minutes, while intestinal sound recovery time in patients not given laxatives appeared on average at 30 minutes.

Table 2. The effect of laxative drug administration on the recovery time of intestinal sound in postoperative patients under general anesthesia

Treatment	n	*Mean*	Difference	*P-value*	Conclusion
Intestinal noise recovery time is given laxatives	15	10,20	10,60	0,000	*P-value* < 0.05 which means H0
Recovery time is not given laxatives	15	20,80			rejected accepted hypothesis

Based on table 2, it was found that of the 15 respondents who were given laxatives, the time to recover from intestinal sound was faster than the 15 respondents who were not given laxatives. The results of the effect analysis using the Mann Whitney test α value (0.05) obtained a P-Value *of* 0.000, which is < 0.05, which means that H0 is rejected, meaning that there is an effect of laxative administration on intestinal noise recovery time in postoperative patients under general anesthesia. Thus, if patients with preoperative are given laxative drugs, the recovery time of intestinal sound in postoperative will be faster.

DISCUSSION

1. Administration of laxative drugs in the preoperative phase

The study involved 30 patients undergoing surgery under general anesthesia, divided into two groups: 15 patients were given 10 mg suppository laxatives and 15 patients who were not given. Administration of laxatives is carried out in the evening and in the morning before surgery. All patients are satisfied from 12 p.m.

Giving laxatives is one of the physical preparations before surgery, with the aim of emptying the intestine and preventing fecal contamination to the surgical area, so as to reduce the risk of postoperative infection (Okusaga et al., 2022). The mechanism of action of laxative drugs is to draw water, soften feces, and increase intestinal peristalsis (Delima et al., 2019). The effect of laxative drugs disappears only after 8-12 hours after administration (Ma et al., 2023).

In this study, the time of administration of laxatives in the room is appropriate, but more complete information is needed to patients and families about how to use, side effects, and uses of laxatives. This is important to avoid the incidence of infection due to the patient defecating on the operating table.

2. Time recovered intestinal sound

The study looked at 30 patients who underwent surgery under general anesthesia, divided

into two groups: 15 patients were given laxatives before surgery and 15 patients who were not. The results showed that the average intestinal sound recovery time in the laxative group was 10.60 minutes faster than in the non-laxative group. Measurements are taken every 15 minutes from the time the patient is transferred to the recovery room until intestinal sound returns to normal (5-35x per minute). The average intestinal sound recovery time in the laxative group was 10.20 minutes, while in the non-laxative group it was 20.80 minutes.

The results of this study show that the administration of laxatives before surgery can accelerate the recovery of intestinal sound. This is likely because the effects of laxatives are still present in patients during surgery, although general anesthesia can slow down digestion. This study is also in line with previous research stating that the effect of osmotic laxative drugs usually occurs after 8-12 hours, and the main effect is flatus (Pfeifer et al., 2021). This is also in line with the theory that laxatives can strengthen intestinal peristalsis by acting directly on the wall of the colon (Simegn et al., 2022).

Based on the analysis, intestinal sound recovery time was faster in patients given laxatives before surgery. This is important because intestinal sound recovery is an indicator of complications in the gastrointestinal tract, such as postoperative paralytic ileus under general anesthesia.

3. The effect of laxative drug administration on the recovery time of intestinal sound in postoperative patients under general anesthesia

This study showed that preoperative administration of laxatives can speed up intestinal sound recovery in postoperative patients under general anesthesia. This is evidenced by the results of analysis using the Mann Whitney test which shows a p-value of 0.000 (< 0.05).

Preoperative laxatives can speed up intestinal sound recovery because of their effect in softening feces and increasing intestinal peristalsis (Burch & Collins, 2021). Laxatives work by drawing water into the intestines, so that the stool becomes softer and easier to remove. Hard **s**tools can inhibit intestinal peristalsis and slow intestinal sound recovery. Laxatives can also stimulates contraction of intestinal muscles**,** until the peristaltic intestine increases (Salama et al., 2022).

Intestinal peristalsis is a wave-like movement that pushes food and feces through the intestines (Limas & Alinudinputra, 2018). Increased intestinal peristalsis helps speed up the movement of feces through the intestines and pushes them out of the body, so intestinal sound recovers faster (Diebakate-Scordamaglia et al., 2022). But it is also necessary to consider other factors that can affect bowel sound recovery, such as the patient's age, duration of surgery, and the type of anesthesia used (Dudi-Venkata et al., 2020).

Keep in mind that general anesthesia can slow or stop intestinal peristalsis for a while, so that by the time the patient is conscious intestinal sound may weak or even not heard at all (Roesel et al., 2021). In addition, another factor that can affect the recovery of intestinal sound is the age of the patient (Zamora et al., 2022). Older age can cause reduced muscle tone and slowed nerve impulses, so intestinal peristalsis also slows down (Sormin et al., 2022; Sriharyanti & Arif, 2016).

Based on this study, although the comparison of intestinal sound recovery time between patients who were given pre-operative laxatives and those who were not given laxatives was relatively small, it can be concluded that pre-operative laxatives do have an effect on intestinal sound recovery. Therefore, the administration of preoperative laxatives is recommended to be carried out according to indications and as part of preoperative preparation.

CONCLUSIONS

Preoperative laxatives can speed up intestinal sound recovery in postoperative patients under general

anesthesia. Therefore, preoperative laxatives are recommended according to indications and part of preoperative preparation in postoperative patients under general anesthesia. So as a nurse, it is necessary to ensure proper administration of pre-operative laxatives in order to observe an increase in the patient's intestinal sound. Further research is needed by paying attention to the dosage of anesthetic drugs to enrich information.

Acknowledgement

Thanks To Poltekkes Kemenkes Malang

Funding Source

Funding by Poltekkes Kemenkes Malang

Conflict of Interest

No Conflict of Interest

REFERENCES

Bibby, N., Lord, R., & Maske, A. (2023). Enhanced Recovery after Surgery. *Nutritional Management of the Surgical Patient*, 33–41. https://doi.org/10.1002/9781119809128.ch5

Burch, J., & Collins, B. (2021). *Oxford handbook of gastrointestinal nursing*. Oxford University Press.

Delima, M., Kartika, K., & Deswita, D. (2019). Pengaruh Pengaturan Posisi terhadap Lama Pemulihan Keadaan Pasien Post Operasi dengan Anestesi Umum di Recovery Room RSAM Bukittinggi. *Jurnal Kesehatan Perintis*, *6*(1), 35–41. https://doi.org/10.33653/jkp.v6i1.206

Diebakate-Scordamaglia, L., Voican, C., & Perlemuter, G. (2022). Iatrogenic constipation in gastrointestinal surgery. *Journal of Visceral Surgery*, *159*(1), S51–S57. https://doi.org/10.1016/j.jviscsurg.2021.12.003

Dudi-Venkata, N. N. (2021). *The Role of Laxatives in Improving Recovery of Gastrointestinal Function after Colorectal Surgery*.

Dudi-Venkata, N. N., Kroon, H. M., Bedrikovetski, S., Moore, J. W., Thomas, M. L., & Sammour, T. (2020). A global survey of surgeons' preferences and practice with regard to laxative use after elective colorectal surgery. *International Journal of Colorectal Disease*, *35*, 759–763.

Goyal, S. (2020). *Emergency Surgery–Handbook*. Notion Press.

He, H., Yang, G., Wang, S., Han, X., & Li, J. (2022). Fast-track surgery nursing intervention in CRC patients with laparotomy and laparoscopic surgery. *Medicine*, *101*(37), e30603. https://doi.org/10.1097/MD.0000000000030603

Joshi, G. P. (2021). General anesthetic techniques for enhanced recovery after surgery: Current controversies. *Best Practice & Research Clinical Anaesthesiology*, *35*(4), 531–541. https://doi.org/10.1016/j.bpa.2020.08.009

Krishnamoorthy, B. (2020). Care of patients requiring vascular surgery. *Pudner's the Surgical Patient E-Book*, *22*(14), 443–501.

Liew, A. N., Narasimhan, V., Peeroo, S., Arachchi, A., Tay, Y. K., Lim, J., Nguyen, T. C., Saranasuriya, C., Suhardja, T. S., & Teoh, W. (2023). Mechanical bowel preparation with pre-operative oral antibiotics in elective colorectal resections: An Australian single institution experience. *ANZ Journal of Surgery*, *93*(10), 2439–2443. https://doi.org/10.1111/ans.18428

Limas, P. I., & Alinudinputra, S. H. (2018). Pengaruh pemberian sirup emulsi laksatif pada lama perawatan pasien pasca hemoroidektomi Milligan-Morgan. *Tarumanagara Medical Journal*, *1*(1), 141–144. https://doi.org/10.24912/tmj.v1i1.2532

Ma, J., Chen, S., Ren, X., Han, H., Gong, M., Song, Y., & Liu, L. (2023). Preoperative bowel preparation promotes intestinal functional recovery after esophagectomy. *African Health Sciences*, *23*(3), 540–546. https://doi.org/10.4314/ahs.v23i3.62

Ningrum, W. A. C., Azhima, A. N., & Suratun, S. (2020). Waktu Muncul Dan Frekuensi Peristaltik Usus Pada Pasien Post Operasi Dengan Mobilisasi Dini. *Jurnal Ilmu Keperawatan Dan Kebidanan*, *11*(1), 78–85. https://doi.org/10.26751/jikk.v11i1.575

Okusaga, O., Mowat, R., & Cook, C. (2022). Effectiveness of early mobilisation versus laxative use in reducing constipation in post-operative orthopaedic patients: An integrative review. *AJAN-The Australian Journal of Advanced Nursing*, *39*(2). https://doi.org/10.37464/2020.392.410

Pfeifer, K. J., Selzer, A., Whinney, C. M., Rogers, B., Naik, A. S., Regan, D., Mendez, C. E., Urman, R. D., & Mauck, K. (2021). *Preoperative management of gastrointestinal and pulmonary medications: Society for Perioperative Assessment and Quality Improvement (SPAQI) consensus statement*. *96*(12), 3158–3177. https://doi.org/10.1016/j.mayocp.2021.08.008

Rahmadina, A. F., Hamarno, R., & Yuswanto, T. J. A. A. (2023). Efektivitas Mobilisasi Dini, Kompres Hangat, dan Mengunyah Permen Karet Terhadap Pemulihan Peristaltik Usus Pasien Post Operasi dengan General Anestesi di RSUD Dr. Soedomo Trenggalek. *Jurnal Penelitian Kesehatan" SUARA FORIKES"(Journal of Health Research" Forikes Voice")*, *14*(4), 685–693. http://dx.doi.org/10.33846/sf14406

Roesel, R., Mongelli, F., Ajani, C., Iaquinandi, F., Celio, D., & Christoforidis, D. (2021). Bowel function recovery after laparoscopic transverse colectomy within an ERAS program: A comparison to right and left colectomy. *Langenbeck's Archives of Surgery*, *406*, 1563–1570.

Salama, H. F. M., Egiz, M. N., & Fathy, A. A. (2022). The Impact of Laxative Drops on The Bowel Motility and Post Caesarean Section Recovery. *The Egyptian Journal of Hospital Medicine*, *88*(1), 2582–2587. https://doi.org/10.21608/EJHM.2022.239205

Simegn, A. E., Melesse, D. Y., Bizuneh, Y. B., & Alemu, W. M. (2022). Perioperative management of patients with liver disease for non-hepatic surgery: A systematic review. *Annals of Medicine and Surgery*, *75*, 103397. https://doi.org/10.1016/j.amsu.2022.103397

Sitepu, A. L., Simarmata, P. C., Anggrareni, R. F., & Sipayung, S. T. (2021). Pengaruh Pemberian Mobilisasi Dini Terhadap Pemulihan Peristaltik Usus Pada Pasien Post Operasi Laparatomi Di Rumah Sakit Grandmed Lubuk Pakam. *Jurnal Keperawatan Dan Fisioterapi (JKF)*, *4*(1), 57–63. https://doi.org/10.35451/jkf.v4i1.827

Sormin, T., Puri, A., & Yudandi, A. (2022). Pengaruh Mobilisasi Dini Dan Kompres Hangat Terhadap Pemulihan Peristaltik Usus Pada Pasien Post Operasi Dengan Anestesi Umum. *Jurnal Ilmu Keperawatan Indonesia (JIKPI)*, *3*(1), 1–12. https://doi.org/10.57084/jikpi.v3i1.840

Sriharyanti, D. E., & Arif, S. (2016). Pengaruh mobilisasi dini rom pasif terhadap pemulihan peristaltik usus pada pasien paska pembedahan dengan anestesi umum di Smc Rs Telogorejo. *Jurnal Ilmu Keperawatan Dan Kebidanan*, *2*(5).

Suprapti, E., Syah, A. Y., Purwaningsih, I., Astuti, Y., Dayaningsih, D., Anggarawati, T., Martini, D. E., Tinungki, Y. L., Sari, N. W., & Martyastuti, N. E. (2023). *Konsep Keperawatan Dasar*. PT. Sonpedia Publishing Indonesia.

Zamora, I. J., Ghani, M. O. A., & Heiss, K. (2022). Enhanced Recovery After Surgery Protocols (ERAS): The Next Generation of Perioperative Quality Improvement, Safety, and Innovation. In *Fundamentals of Pediatric Surgery* (pp. 67–77). Springer.

Zhou, X., & He, Y. (2020). Understanding perioperative bowel preparation for colorectal surgery. *Digestive Medicine Research*, *3*. https://doi.org/10.21037/dmr.2019.12.08