



ORIGINAL ARTICLE

# Risk factors for postoperative complications in patients on maintenance hemodialysis who undergo abdominal surgery



Tomoaki Ito\*, Hiroshi Maekawa, Mutsumi Sakurada, Hajime Orita, Tomoyuki Kushida, Koji Senuma, Koichi Sato

Department of Surgery, Juntendo Shizuoka Hospital, Juntendo University School of Medicine, Shizuoka, Japan

Received 5 November 2014; received in revised form 30 March 2015; accepted 31 March 2015  
Available online 29 June 2015

## KEYWORDS

abdominal surgery;  
complication;  
gastrointestinal  
disease;  
hemodialysis;  
maintenance  
hemodialysis

**Summary** *Background/Objective:* Patients on hemodialysis (HD) who undergo abdominal surgery for gastrointestinal disease are at increased risk of postoperative complications. In this study, we retrospectively investigated the predictors of postoperative complications among such patients.

*Methods:* The study group comprised 36 HD patients who underwent abdominal surgery for gastrointestinal disease between 2003 and 2012. The clinicopathological factors of the patients who did and did not suffer postoperative complications were compared.

*Results:* The overall morbidity and mortality rates were 39% (14/36) and 14% (5/36), respectively. Physical status according to the American Society of Anesthesiologists (ASA) classification ( $p = 0.0203$ ) and intraoperative blood loss ( $p = 0.0013$ ) were found to differ significantly between the groups.

*Conclusion:* The morbidity and mortality rates of HD patients who underwent abdominal surgery for gastrointestinal disease were high. Physical status according to the ASA classification and intraoperative blood loss were found to be associated with postoperative complications. Therefore, patients with comorbidities, such as heart disease and diabetes mellitus, have to be treated appropriately before surgery. In addition, it is important that surgeons perform operations carefully and avoid excessive blood loss.

Copyright © 2015, Asian Surgical Association. Published by Elsevier Taiwan LLC. All rights reserved.

Conflicts of interest: None.

\* Corresponding author. Department of Surgery, Juntendo Shizuoka Hospital, 1129 Nagaoka, Izunokuni-shi, Shizuoka 410-2295, Japan.  
E-mail address: [tomo-ito@juntendo.ac.jp](mailto:tomo-ito@juntendo.ac.jp) (T. Ito).

## 1. Introduction

In 2012, >2.35 million patients received renal replacement therapy around the world.<sup>1</sup> In Japan, >300,000 patients were receiving dialysis treatment at the end of 2011, and the number of patients receiving hemodialysis (HD) is increasing steadily.<sup>2</sup> The mean age of new dialysis patients is 67.84 years, and the mean age of the entire dialysis patient population is 66.55 years.<sup>2</sup> The growing number of patients on long-term HD is likely to lead to an increase in the number of HD patients who require surgery.<sup>3</sup>

Patients receiving HD are at increased risk of post-operative complications such as a tendency to bleed, delayed wound healing, infection, electrolyte imbalances, and hemodynamic instability.<sup>4–7</sup> According to previous studies, the morbidity and mortality rates of HD patients who undergo abdominal surgery range from 39% to 41.8% and from 5.7% to 24%, respectively.<sup>8–10</sup>

It is important to identify the risk factors for morbidity and mortality among HD patients who undergo abdominal surgery to determine the optimal surgical procedures for such patients. In this study, we retrospectively investigated the predictors of complications in HD patients who underwent abdominal surgery for gastrointestinal disease. In addition, we have summarized the findings obtained for the patients who died of diseases related to their postoperative complications.

## 2. Materials and methods

The study group comprised 36 patients who were on maintenance HD therapy and underwent abdominal surgery for gastrointestinal disease at the Department of Surgery, Juntendo Shizuoka Hospital, between November 2003 and December 2012. Patients who underwent noninvasive surgery were excluded from this study.

The clinical characteristics of the 36 patients who underwent abdominal surgery for gastrointestinal disease are shown in Table 1. There were 28 male and eight female patients. The mean age of the patients was 65.1 years (range 44–82 years) and their clinical diagnoses included colorectal cancer in 14 patients; gastric cancer in eight patients; cholelithiasis in five patients; acute appendicitis in two patients; and remnant gastric cancer combined with hepatocellular carcinoma, gallbladder polyps, a requirement for colostomy due to colorectal perforation, colon perforation, ileus, a perianal abscess, and an intraperitoneal abscess in one patient each. The underlying renal disease was diabetic nephropathy in 11 patients, nephrosclerosis in 10 patients, glomerulonephritis in five patients, nephrectomy in three patients, and polycystic kidney in one patient. Data regarding the underlying renal disease were not available for six cases. All patients underwent HD, and the mean HD duration before the surgery was 7.4 years (range 0.2–31 years). Twenty-five patients had coexisting disorders including hypertension in 14 patients; diabetes mellitus in 12 patients; cerebrovascular disease in seven patients; angina pectoris in five patients; an old myocardial infarction in three patients; chronic heart failure in three patients; arteriosclerosis obliterans in three patients; chronic hepatitis in two patients; and aortic dissection,

**Table 1** Patients' characteristics.

Clinical factors		No. of patients
Total		36
Sex	Male	28
	Female	8
Age (y), mean $\pm$ SD		65.1 $\pm$ 75.2
Clinical diagnosis		
Colorectal cancer		14
Gastric cancer		8
Cholelithiasis		5
Remnant gastric cancer and hepatocellular carcinoma		1
Gallbladder polyps		1
A requirement for colostomy caused by colorectal perforation		1
Colon perforation		1
Ileus		1
Acute appendicitis		2
Perianal abscess		1
Intraperitoneal abscess		1
Reason for hemodialysis		
Diabetes mellitus		11
Nephrosclerosis		10
Glomerulonephritis		5
Nephrectomy		3
Polycystic kidney		1
NA		6
Duration of hemodialysis (y), mean $\pm$ SD		7.4 $\pm$ 13.1
Comorbidities		
Hypertension		14
Diabetes mellitus		12
Cerebrovascular disease		7
Angina pectoris		5
Previous myocardial infarction		3
Chronic heart failure		3
Arteriosclerosis obliterans		2
Aortic dissection		1
Paroxysmal atrial fibrillation		1
Chronic hepatitis		2
Sick sinus syndrome		1
Valvular disease		1
Performance status		
0		32
1		0
2		4

SD = standard deviation, NA = not available.

paroxysmal atrial fibrillation, sick sinus syndrome, and valvular disease in one patient each. Preoperative performance status (PS) was evaluated according to the criteria

Download English Version:

<https://daneshyari.com/en/article/4282529>

Download Persian Version:

<https://daneshyari.com/article/4282529>

[Daneshyari.com](https://daneshyari.com)