ECRONICON OPEN ACCESS

EC GASTROENTEROLOGY AND DIGESTIVE SYSTEM

Research Article

Morbidity and Mortality after Digestive Surgery

K Rghioui*, M Azime, O Elallam, C Elkettani, R Cherkab and L Barrou

CHU Ibn Rochd, Casablanca, Morocco

***Corresponding Author**: K Rghioui, CHU Ibn Rochd, Casablanca, Morocco.

Received: April 14, 2018; **Published:** June 07, 2018

Abstract

Hypothesis: Better knowledge of independent risk factors might decrease mortality and morbidity rates following digestive surgery.

Hypothesis: Better knowledge of independent risk factors might decrease mortality and morbidity rates following digestive surgery.

Interventions: Study included all consecutive patients hospitalized in the surgical resuscitation department after abdominal surgery regardless of the operated organ, during 3 years.

The structured sheet of data collection included more than 100 items on all perioperative data concerning the patient, the disease, and the operating surgeons. Postoperative mortality and morbidity were defined as in-hospital death and complications.

A first descriptive analysis of the various parameters collected was carried out.

A bivariate analysis was then performed to study the factors affecting morbidity and mortality in digestive surgery.

The comparison was made using the students t test for quantitative variables and the chi-square or chi-square test for the qualitative variables.

A difference is considered significant when $P < 0.05$ (5%).

Results: Among 360 patients, the in-hospital death rate was 15.08% and the overall morbidity rate was 41.61%, the mean age was 55.54 ± 15, 10 years with extreme ages of 18 years and 85 years with sex ratio of 1.01. Four factors were incriminated in post-operative mortality notably: renal failure $P = 0.002$, duration of stay $P = 0.001$, parenteral nutrition $P = 0.047$, long duration of intubation $P = 0.001$, perioperative blood transfusion $P = 0.001$. Three factors influencing morbidity were found: duration of stay $P = 0.003$, Parenteral nutrition $P = 0.018$, long duration of intubation $P = 0.0001$.

Conclusion: Knowledge of the true frequency of both mortality and morbidity is crucial in planning health care and research and identifying risk factors.

Keywords: *Morbidity; Mortality; Digestive Surgery*

Introduction

The combined progress of abdominal surgery and anesthesia leads to more frequent operative indications and includes fragile patients or serious pathologies.

Postoperative morbidity and mortality is an element that needs to be evaluated and analyzed in surgical resuscitation. Although pathological processes and new therapeutic approaches to surgery are well known, data on risk factors for morbidity and mortality are less available.

In the wake of what has just been mentioned, it is clear that the objective of our work is to evaluate the postoperative morbidity and mortality rate and to identify the main predictors of postoperative morbidity and mortality in patients. Benefited from abdominal surgery and required a stay in surgical resuscitation.

Methodology

Design

This is a retrospective analytical study:

- **Study site:** Surgical resuscitation anesthesia service, of the University Hospital Center (CHU) Ibn Rochd of Casablanca.
- **Period of study:** It is spread over a period of 3 years from January 1, 2014 to December 31, 2016.

Patients

This study involved 360 patients undergoing abdominal surgery who required a stay in the surgical anesthesia resuscitation department (Pavilion 17).

Inclusion criteria

- Our study was conducted in all the patients operated by the visceral surgery teams Wing1 and Wing3 at the central block.
- Included were all patients undergoing abdominal surgery who required a stay in intensive care.

Exclusion criteria

- We excluded patients operated by other teams and referred for additional support to resuscitation services.

Results

The average age of the patients was 55.54 ± 15, 10 years with extreme ages of 18 years and 85 years. The maximum of morbidity and mortality concerns the age group greater than 60 years with a respective percentage of 37.88%, of which 179 men and 181 women is a sex ratio of 1.01. 229 of our 360 patients had a medical and/or surgical history of 39.61%. 93 patients had digestive ATCDs (21%) 55 had cardiovascular risk factors (12.2%), 40 patients were diabetic (11.2%), 26 patients had pneumatic ATCDs (6%). 131 patients had no ATCD. 299 or 83% of patients had no impaired consciousness, Most surgeons are Professors, 135 cases or 38%, have benefited from an intraoperative transfusion. In our series, 41.2% of the interventions were equitably interested in the two floors, mesocolic and sub mesocolic (148/359cas), we also counted 61 or 16.9% of the parietal interventions, and two other interventions endocrine. The stomach, the colon, the abdominal wall and the rectum/sigmoid, were the most operated organs (62%). Subtotal gastrectomy is the type of intervention that was most performed in our study. The abdominopelvic surgery sometimes requires heavy surgery (Table 1); more than 30% of patients have benefited from an intervention whose duration exceeds at least 4H. 144 patients presented one or more preoperative incidents, is 40%. Bleeding is the most frequent incident, 29% were transfused (Table 2). Most patients were ex-cased in the resuscitation department after transfer.286 patients benefited from a urinary survey with an average of 4.7 days. The use of vasoactive drugs was in 16% of patients including norepinephrine especially for patients who had hypotension following a hemorrhagic shock. 220 of our patients had a parenteral diet or a percentage of 61%, the in other words, 39% had enteral feeding. 273 of our patients had multimodal analgesia, or 76%, while the remaining 24% had epidural analgesia. It was noted that 110 of our patients had a postoperative transfusion, that is 31%. 99 of our patients received antibiotic therapy or a percentage of 28%. Betalactamines are the most used antibiotics postoperatively in abdominal surgery in the middle of the resuscitation. 83% of the patients were hospitalized less than 7 days in the resuscitation and then transferred to their services. Of the 360 patients undergoing abdominal surgery, the outcome was favorable in 189 patients, or 52% of cases. The urinary tract infections and the infection of the operating site are the nosocomial 2 infectious most encountered postoperatively in our study with respective percentages of 6.13% and 2.51%. We counted 39 respiratory complications, including 15 pleural effusions or 4.18%, 11 SDRA is 3.06%, 9 hypoxia is 2.51%, and 4 atelectasis. The main cardiovascular complications observed in our series are cardiac rhythm

disorders with an incidence of 7.52%. In our series, 21 patients had Neuropsychic complications, an incidence of 5.85%. The main complication is renal failure, occurring in 11 patients, an incidence of 3.06%. Peritoneal effusion occurred in 10 patients, an incidence of 2.79%, this complication occurred in 165 patients, an incidence of 45%. There was 52 deaths, an overall mortality of 15.08%. the most common death was septic shock, which is 8% (28 cases/360). In the majority of cases it started from the digestive system and much more rarely at the point of departure from the urine or the lungs. Other causes of death were dominated by heart shocks and hemorrhagic shocks.

Reason for hospitalisation		**Number of cases**	
Esophagus	Esophagus neoplasia (ADK, squamous cell carcinoma)	0	0
Stomach	Total gastrectomy	24	80
	Subtotal gastrectomy	50	
	Gastrodujejunal diversion	6	
Pancreas	pancreatectomy	2	15
	Cephalic duodeno-pancreatectomy DPC	10	
	Tm of the pancreas head	3	
Hepatic	Hepatectomy	1	22
	Hepatic diversion	4	
	Intrahepatic carcinoma	0	
	Bisegmentectomie	9	
	Hydatid cyst of the liver	6	
	Liver decompensation	2	
Gallbladder	Cholecystectomy	22	22
	Biliary ADK	0	
Spleen	splenectomy	4	8
	Splenectomy	3	
Grelocolique	Ileo-hemicolectomy/hemi colectomy	34	76
	Colic ADK	2	
	IBD	0	
	Choledocojejunal diversion	3	
	Partial colectomy	12	
	Total colectomy	21	
	Gastric fistula	1	
	Discharge colostomy	2	
	Acute intestinal obstruction	1	
Proctologic	rectal ADK	4	42
	Abdominal perineal amputation	13	
	Rectal resection	25	
Gynecology	Hysterectomy	4	4
Adrenal	pheochromocytoma resection	2	2
Duodenum	Tumor duodenum	3	3
peritoneum	peritonitis	12	13
	Peritoneal ADK	1	
Abdominopelvic mass	Resection of an abdominopelvic tumor	26	27
	Tumor of the abdominal wall	1	
Hernia	Hernia of the white line	7	7
Eventration	Postoperative Eventration (EPO)	21	21
Explorative Laparotomy	Explorative Laparotomy	19	19

Table 1: *Reason for hospitalization.*

Complication	Number of cases
Nothingness	217
1. Bleeding	107
2. Hemodynamic instability	31
3. Rhythmic disorders	0
4. Respiratory distress	2
5. Iatrogenic perforation	3
6. Hydrocholecystite	0
7. Pulmonary embolism	0
8. Skin allergy	0
9. Anaphilactic shock	1

Table 2: *Intraoperative complications.*

Discussion

The statistical analysis in our series found that age is not a factor that influences the rate of postoperative morbidity (P = 0.338), nor that of postoperative mortality (P = 0.187). However, age is used as a predictor of morbidity and mortality by other studies, particularly after colorectal surgery [1]. In our study, however, the sex of the patients is not a factor that influences the postoperative morbidity rate (P 0.398) or the postoperative mortality rate (P = 0.406). Nevertheless, the meta-analysis, involving 18 studies and 3,359 patients [2], argues for a slight increase in the risk for females. With respect to history, diabetes is not a factor that influences the rate of postoperative morbidity (P 0.314) or postoperative mortality (P = 0.847) [3]. One study found that 3% of patients having developed postoperative respiratory complications are asthmatics [4]. Other reviews, however, claim that asthma is not a risk factor for postoperative respiratory complications [5]. These findings are consistent with the results of our analytical study, where asthma is not a factor that influences the rate of postoperative morbidity (P 0.453) and postoperative mortality (P = 0.729). Statistical analysis in our study found that pre-existing renal failure is not a factor that influences postoperative morbidity (P 0.376) significantly influenced the rate of postoperative mortality (P = 0.002), a univariate analysis, showed preoperative renal dysfunction (p = 0.019), as an independent preoperative factor [6]. in the literature, no study specifies the influence of the operated organ on the postoperative morbidity and mortality rate in abdominal surgery. In our series, interventions do not influence either the morbidity rate (P = 0.298) or the mortality rate (P = 0.080). A long stay in intensive care is associated with a poor prognosis in the short and long term [7], In our series, the length of stay did not significantly influence the morbidity rate (P = 0.003), and thus the rate of mortality (P = 0.001). The postoperative mechanical ventilation should be as short as possible because of its effects on the occurrence of nosocomial pneumonia and bronchial fistulas. The contribution of noninvasive ventilation (NIV) seems to be interesting in this postoperative context [8]. In our series, mechanical ventilation did influence the morbidity rate (P = 0.001), and thus the mortality rate (P = 0.001). In abdominal surgery, in patients over 40 years of age, with or without heparin prophylaxis, FORSBERC and TERNEREN [127] note a much higher risk of postoperative complications ($p < 0.001$) when operating time exceeding 100 min. Transfusions are needed. In our study, the use of preoperative transfusion significantly influenced the mortality rate (P = 0.001), but did not influence the morbidity rate (P = 0.193). Parenteral nutrition did not change postoperative mortality [9], but decreases postoperative infectious morbidity [10,11]. The parenteral route is indicated only when the digestive tract is not usable. The enteral route is recommended first-line when the anatomic and functional state of the digestive tract allows it. Compared with parenteral nutrition, its efficacy seems to be superior [12,13], its morbidity and cost are lower [11]. In our study, the type of diet used, influenced the mortality rate (P = 0.047) and the morbidity rate (P = 0.018).

Conclusion

The study of postoperative morbidity and mortality in a surgical ward is not a criterion for evaluating the efficiency of a medical-surgical team. It allows, through a self-evaluation, to detect the main factors favoring the occurrence of complications, and thus the improvement of the care of patients.

Bibliography

1. Arnaud Alves., *et al*. "Postoperative mortality and morbidity in French patients undergoing colorectal surgery: results of a prospective multicenter study". *Archives of Surgery* 140.3 (2005): 278-284.

2. McKibben L., *et al*. "Guidance on public reporting of healthcare-associated infections: recommendations of the Healthcare Infection Control Practices Advisory Committee". *Infection Control and Hospital Epidemiology* 26.6 (2005): 580-587.

3. CooN WW. "Risk factors in pulmonary embolism". *Surgery, Gynecology and Obstetrics* 143.3 (1976): 385-390.

4. Stein M and Cassara EL. "Preoperative pulmonary evaluation and therapy for surgery patients". *Journal of the American Medical Association* 211.5 (1970): 787-790.

5. Qaseem A. "Risk assessment for and strategies to reduce perioperative pulmonary complications for patients undergoing noncardiothoracic surgery : a guideline from the American College of Physicians". *Annals of Internal Medicine* 144.8 (2006): 575-580.

6. M Meziane., *et al*. "Facteurs prédictifs de long séjour en réanimation après chirurgie cardiaque programmée de l'adulte: étude rétrospective monocentrique sur 5 ans et demiPredictors of prolonged ICU stay following elective adult cardiac surgery: Monocentric retrospective study on 5 and half years". Annales de Cardiologie et d'Angéiologie 66.2 (2016): 66-73.

7. Horan TC., *et al*. "CDC definitions of nosocomial surgical site infections, 1992: a modification of CDC definitions of surgical wound infections". *Infection Control and Hospital Epidemiology* 13.10 (1992): 606-608.

8. Stephan F. "Complications postopératoires de la chirurgie pulmonairePostoperative complications following lung surgery". Réanimation 11.1 (2002): 40-48.

9. Warren JW., *et al*. "Antibiotic irrigation and catheter-associated urinary-tract infections". *New England Journal of Medicine* 299.11 (1978): 570-573.

10. Turk M and Stamm W. "Nosocomial infections of the urinary tract". *American Journal of Medicine* 70.3 (1981): 851-854.

11. Beeson PB. "The case against the catheter [editorial]". *American Journal of Medicine* 24 (1958): 1.

12. Huth TS and Burke JP. "Infections and antibiotic use in a community hospital, 1971-1990". *Infection Control and Hospital Epidemiology* 12.9 (1991): 525-534.

13. Bryan C and Reynolds K. "Hospital-acquired bacteriemic urinary tract infection. Epidemiology and outcome". *Journal of Urology* 132.3 (1984): 494-498.

Volume 5 Issue 7 July 2018