

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: <http://www.kjms-online.com>

Short Communication

Simplified scoring system for prediction of mortality in acute suppurative cholangitis

Barış Doğu Yıldız, Sabri Özden, Barış Saylam, Fahri Martlı, Mesut Tez*

Ankara Numune Education and Research Hospital, Ankara, Turkey

Received 10 April 2017; accepted 27 December 2017

KEYWORDS

Acute cholangitis;
Suppurative;
Mortality;
Scoring system;
Red cell distribution
width

Abstract Our objective in this study was to identify the factors contributing to mortality in acute suppurative cholangitis which could be tested easily in every emergency clinic. This is a retrospective study enrolling 104 patients with acute suppurative cholangitis. Demographic and laboratory data were collected for analysis. In univariate analysis red cell distribution width, total bilirubin level, intensive care unit admission was identified as statistically significant ($p < 0.05$) to predict mortality. Three variables were statistically significant in multivariate analysis: total bilirubin level equal to or more than 6.9 mg/dl, red cell distribution width equal to or more than 14.45%, and admission to intensive care unit. We found a new scoring system for prediction of mortality in acute suppurative cholangitis utilizing only three variables. This would serve as a simplified, rapid way to direct patients for advanced interventions instead of wasting time with more complicated and time consuming multi-variable scoring systems.

Copyright © 2018, Kaohsiung Medical University. Published by Elsevier Taiwan LLC. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Introduction

Acute cholangitis is an acute inflammation and infection of the biliary tract. The conventional approach for acute cholangitis is conservative management involving cessation of oral feeding, intravenous antibiotics and fluids and

endoscopic retrograde choangiopancreatography (ERCP) or surgical intervention when necessary [1].

Acute cholangitis is graded in severity from grade I to III (mild, moderate, severe). Severe acute cholangitis is associated with at least one of cardiovascular, neurological, respiratory, renal, hepatic and/or hematological dysfunction [2]. Acute suppurative cholangitis (ASC) is a severe form of acute cholangitis which is life-threatening without appropriate timely management [3].

Mortality in cholangitis changes between 2.7% and 10% [4]. It is not clear which patients will progress to sepsis and death in cholangitis despite medical management and which need decompression [5].

Conflicts of interest: All authors declare no conflicts of interest.

* Corresponding author. Ankara Numune Education and Research Hospital, Department of General Surgery, Talatpaşa bulvarı no: 5, 06100 Samanpazarı, Ankara, Turkey.

E-mail address: mesuttez@yahoo.com (M. Tez).

<https://doi.org/10.1016/j.kjms.2017.12.016>

1607-551X/Copyright © 2018, Kaohsiung Medical University. Published by Elsevier Taiwan LLC. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Our aim in this study was to identify the factors contributing to mortality in ASC and create a reliable scoring system which could be tested easily in every emergency clinic.

Patients and methods

This is a retrospective study enrolling 104 patients with ASC diagnosed with presence of purulent material inside bile ducts by ERCP or surgical exploration treated at our hospital between January 2010 and July 2015. We extracted patients with ASC out of cholangitis patients using relevant International Statistical Classification of Diseases and Related Health Problems codes. The data about patient demographics, laboratory values at the time of admission, radiological study results and clinical progression were collected retrospectively from patient charts. The data collected (Table 1) included age, gender, white blood cell count, hemoglobin, red cell distribution width (RDW) blood urea, creatinine, liver function tests, albumin, systolic blood pressure, diastolic blood pressure, mean arterial pressure, pulse, medical illnesses, admission to intensive care unit (ICU). Admission to ICU was decided using Sepsis-related Organ Failure Assessment (qSOFA) criteria (greater than or equal to 2). qSOFA was recommended to evaluate sepsis in accordance with its new definition. qSOFA criteria for sepsis include a Glasgow Coma Scale score of less than or equal to 13, systolic blood pressure less than or equal to 100 mm Hg, and respiratory rate greater than or equal to 22 per minute (1 point each to yield a score value between 0 and 3) [5], Ultrasonography (USG) findings, computed tomography findings, ERCP findings, type of surgery also

recorded. Patients were surgically decompressed if ERCP was not available, unsuccessful or if there was a suspicion of a malignancy. Diagnosis of suppurative cholangitis was made when hyperbilirubinemia and either fever or abdominal pain was present and ERCP or surgical exploration revealed presence of purulent material inside the common bile duct. Patients without this particular ERCP or bile duct exploration finding were excluded from the study.

Statistical analysis

The statistical analysis of the study was performed by a biomedical statistician. Factors associated with mortality and morbidity were analyzed using univariate and multivariate analysis. Primary endpoint of our study was mortality. Deaths that occurred within 30 days after surgical treatment or death at the same admission was defined as hospital mortality.

Shapiro–Wilk test was used for assessing normality. Continuous data were presented as mean \pm standard deviation while differences between groups were analyzed by means of Students t test. Categorical variables were analyzed with χ^2 test. Logistic regression was used to identify variables associated with mortality. Variables with $p \leq 0.2$ in the univariate analyses were included in multivariate analyses. Results of the multivariate analysis were shown as odds ratio (OR) and corresponding 95% confidence interval (CI). The analysis of the receiver–operator characteristic (ROC) curve was used to define the optimal cut-off value for continuous variables in mortality. A clinical score based on the final logistic regression model was constructed; 1 point was given to indicate presence of each predictive factor.

Table 1 Data collected from patient charts.

	Survivors	Non-Survivors	p
Gender (F/M)	38/55	6/5	0.521
Age (years) (mean \pm SD)	65.55 \pm 14.69	69.18 \pm 19.5	0.440
Blood urea nitrogen (mg/dL) (mean \pm SD)	34 (23.5–56)	33 (22–61)	0.983
Creatinine (mg/dL) (mean \pm SD)	1.26 \pm 0.94	1.23 \pm 0.7	0.876
Albumin (g/dL) (mean \pm SD)	2.67 \pm 1.1	2.9 \pm 1.2	0.675
Alanine aminotransferase (IU/L) (mean \pm SD)	106 (56–188)	170 (91–227)	0.272
Aspartate aminotransferase (IU/L) (mean \pm SD)	88 (49–158)	144 (73–194)	0.183
Gamma glutamyl transferase (U/L)	328 (189–523)	364 (242–452)	0.658
Alkaline Phosphatase	241 (159–395)	338.5 (242–567)	0.059
Total bilirubin (mg/dL) (mean \pm SD)	5.95 (2.90–9.7)	9.1 (4.80–13.80)	0.048
Direct bilirubin (mg/dL) (mean \pm SD)	4.34 (1.77–6.80)	5.85 (2.95–8.3)	0.172
Red cell distribution width % (mean \pm SD)	14.55 (13.4–15.85)	16.1 (14.7–16.9)	0.044
White cell count (/mm ³) (mean \pm SD)	11.2 (7.60–16.80)	9.5 (7.4–15.7)	0.583
Co-morbidities			0.608
None	35	3	
Diabetes Mellitus	14	1	
Hypertension	11	2	
Cerebrovascular accident	3	0	
Combination of co-morbidities	25	3	
Other co-morbidities	5	2	
Endoscopic retrograde cholangiopancreatography findings			NA
Purulent	76	8	
Purulent + Debris	17	3	

NA: Not applicable.

Download English Version:

<https://daneshyari.com/en/article/8759575>

Download Persian Version:

<https://daneshyari.com/article/8759575>

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