The THAI Journal of SURGERY 2019;40:35-43.
Official Publication of The Royal College of Surgeons of Thailand

Original Article

Factors Affecting Short Life Expectancy of Untreated Hepatocellular Carcinoma Patients after Diagnosis

Ploytip Jansiriyotin, MD
Anuwat Chantip, MD
Department of Surgery, Lampang Regional Hospital

Abstract

Objective: Hepatocellular carcinoma (HCC) is one of the leading causes of cancer deaths in Thailand, and there are very few studies which describe the prognostic factors that affect survival. The aim of the present study is to identify factors associated with survival of untreated HCC patients in Lampang, Thailand.

Materials & Methods: A retrospective cohort study design. Patients diagnosed with malignant neoplasm of liver cell carcinoma during the years 2011 to 2015 were enrolled. Patients with insufficient data, misdiagnosed, or who received any treatment were excluded. The characteristics were compared between dead and survived groups by using t-test and exact probability test. Univariable analysis and multivariable analysis were done by using logistic regression analysis. Prognostic factors were considered significant if the p-value < 0.05.

Results: One hundred and eleven untreated patients were analyzed. Median survival was 87 days (2.9 months). In multivariable analysis, presence of cirrhosis (OR=21.72, 95% CI = 1.83-257.72, p = 0.015), large ascites (OR = 3.38, 95% CI = 1.068-10.79, p = 0.040), and hepatic venous outflow obstruction (HVOO, OR = 5.43, 95% CI = 1.05-27.94, p = 0.043) were associated with death from HCC.

Conclusions: The presence of cirrhosis, large ascites, and HVOO were found to be significantly associated with short life expectancy of untreated HCC patients.

Keywords: Hepatocellular carcinoma, Untreated, Prognostic factors

Introduction

Hepatocellular carcinoma (HCC), or hepatoma, is the most common primary liver tumor. It is the third major cause of cancer deaths worldwide[1]. There were 14 million cases suffering from this in 2012[2]. The risk factors include hepatitis B virus (HBV) and hepatitis C virus (HCV) infections, alcohol consumption, nonalcoholic fatty liver disease (NAFLD), Budd-Chiari syndrome, and Aflatoxin. Cirrhosis underlies HCC in almost 90% of the cases[1]. Universal hepatitis B vaccination as a primary prevention resulted in significantly reduced HCC incidence, as did the screening program which makes the patients amenable to curative treatment[3]. Treatment strategies depend on several factors including liver reserve and tumor status[1]. Patient performance status is also considered in the international guidelines such as Barcelona Clinic Liver Cancer (BCLC) and Hong Kong Liver Cancer (HKLC) staging systems[4-6]. However, the survival rate is poor[7]. The prognosis is predicted, not just by treatment modality, but by patient status, tumor

Correspondence address: *Ploytip Jansiriyotin, MD, Department of Surgery, Lampang Regional Hospital, 280 Paholyothin Rd, Muang Lampang, Thailand 52000; Telephone: +66 89 559 3314; E-mail: ployteep.pt@gmail.com*

characteristics, and underlying liver, like the factors considered in treatment strategies[5]. Some prognostic factors that may affect survival have been studied such as portal vein thrombosis (PVT), tumor volume, alpha-fetoprotein (AFP) level, Child-Pugh class, albumin-to-ALP ratio, Model for End-Stage Liver Disease (MELD) score, serum bilirubin level, presence of ascites, and extrahepatic metastasis[8-19]. According to recent treatment guidelines, there are patients whom curative treatments were not given and there are only few studies on this group of patients[16,18,20]. The present will focus on the survival and prognostic factors that affect short life expectancy in hepatocellular carcinoma patients who did not receive definitive treatment.

Patients and Methods

Lampang Regional Hospital Research Center has electronic data of 687 patients diagnosed with malignant neoplasm of liver cell carcinoma (C220 from International Classification of the Diseases version 10th or ICD10) from 1st January 2011 to 31st December 2015. We excluded patients who were misdiagnosed, had insufficient data, and who received any treatment, according to the medical records.

The underlying diseases were assessed. Laboratory and imaging evaluation were considered at the time of diagnosis. Etiologies of HCC were assessed for alcohol consumption, and by serologic tests for HBV and HCV infections. Child-Pugh scores were evaluated retrospectively: encephalopathy was evaluated by the patients' consciousness from medical notes, ascites identified from imaging, and others by laboratory evaluation. Tumor morphology, presence of cirrhosis, extrahepatic metastasis, PVT, hepatic venous outflow obstruction (HVOO), and signs of portal hypertension were assessed by imaging either on ultrasound or computed tomography (CT). Complications of HCC were identified by esophagogastric variceal bleeding or tumor rupture. Treatment modalities were assessed from the medical notes. The patients' dates and causes of death were obtained from Lampang Municipality. The patient performance status was not included in this study due to lack of data.

This was a retrospective cohort study. Continuous data are shown as mean value and standard deviation (mean ± SD), and discrete variables as absolute and relative frequencies. Comparison of the continuous data was carried out using t-test and comparison of discrete variable using Fisher exact probability test. The overall survival was estimated by Kaplan Meier's method. Association with P value < 0.05 or odds ratio (OR) ≥ 1.5 at univariable analysis were entered into logistic regression analysis, where the cutoff continuous variables were the values that were presented in previous studies[21-29]. A two-tailed P value < 0.05 was considered statistically significant. STATA version 12 was used to analyze the data. Approval for the study was obtained from the Research Committee of Lampang Regional Hospital.

Results

As shown in Figure 1, 227 patients were included in this study. Eighty-four of them were excluded due to misdiagnosis or insufficient data. There were 143 whom were confirmed to have HCC. Thirty-two patients who received any treatment were excluded. The final 111 patients were included in the analysis: 58 died within 87 days and 53 survived beyond that time period. The median survival time in this group of patients was 87 days shown as a Kaplan-Meier curve in Figure 2.

The baseline characteristics of the untreated HCC patients are shown in Table 1. The patients were predominantly male in both groups. The mean ages were 54.2 and 55.1 years in the group surviving beyond 87 days, and in group dying within 87 days, respectively. The mean body weights were 55.1 kg in the survived group and 55.3 kg in the death group. Underlying diseases included diabetes mellitus (DM), hypertension (HT), chronic obstructive pulmonary disease (COPD), human immunodeficiency virus (HIV) infection, renal insufficiency, gout, and other diseases were not significantly different between both groups.

As shown in Table 2, the prevalence of cirrhosis was significantly higher in the death group (OR 7.18, p-value 0.014). The Child-Pugh score was significantly higher in the death group (OR 5.57, p-value < 0.001). There were 3 main etiologies considered in this study: HBV and HCV infection, and alcohol consumption, which were not statistically significant in both groups.

As shown in Tables 3 to 5, there were no significant differences in number of tumors, signs of portal hypertension including splenomegaly and umbilical vein recanalization, and the presence of esophageal varices (EV) bleeding. Most factors had either a high odds ratio (OR > 1.5) or were statistically significant (p-value $<$ 0.05) including extrahepatic metastasis, PVT, especially main portal vein thrombosis, HVOO, especially inferior

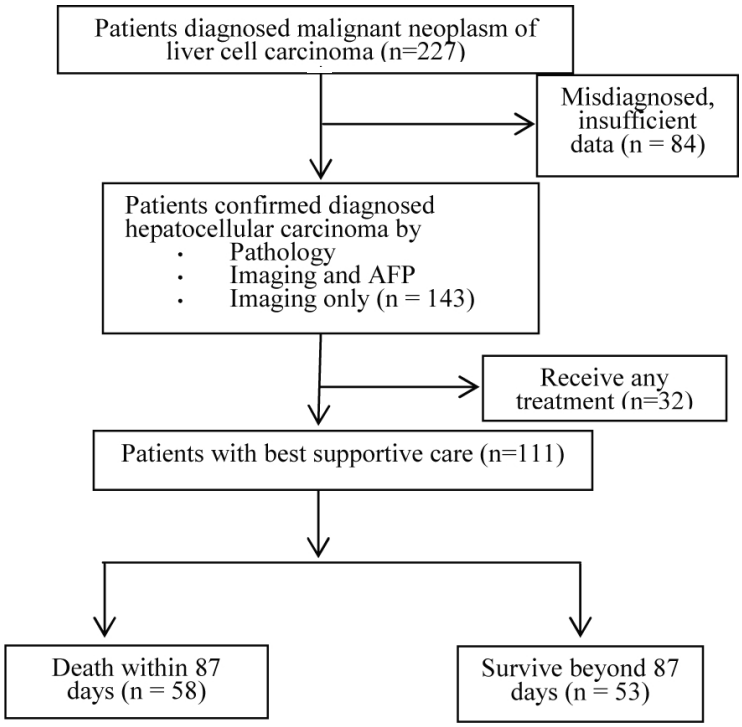

Figure 1 Flow diagram of the study

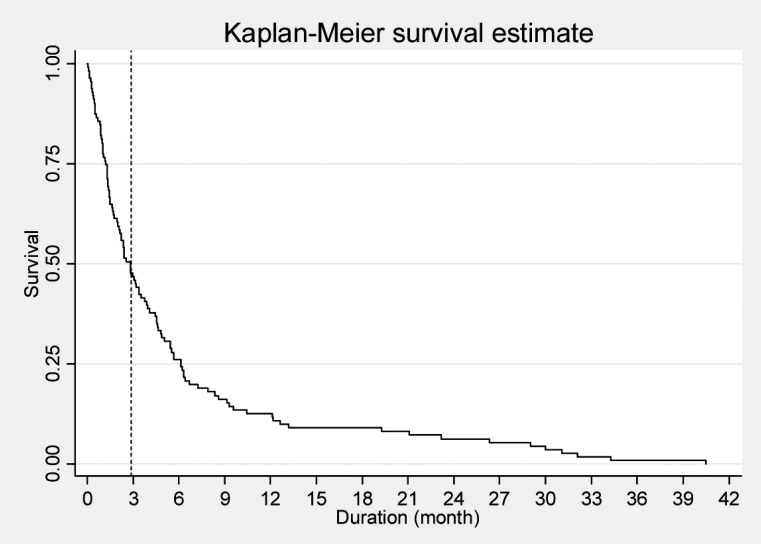

Figure 2 Kaplan-Meier curve show the median survival of untreated HCC patients

vena cava (IVC) and middle hepatic vein (MHV), large ascites, varices, presence of tumor rupture, Cancer of the Liver, Italian Program (CLIP) score, Okuda staging, and maximal tumor diameter.

As shown in Table 4, biochemical factors with a high odds ratio (OR > 1.5) or statistical significance (p-value < 0.05) included: serum glutamic oxaloacetic transaminase (SGOT) level, SGOT-to-serum glutamic pyruvic transaminase (SGPT) ratio, total bilirubin (TB) level, International Normalized Ratio (INR), and MELD score.

On multivariable logistic regression, shown in Table 5, after including factors with high OR and statistical significance, only 3 factors remained: the presence of cirrhosis (OR 21.72, p-value 0.015), large ascites (OR 3.38, p-value 0.040), and HVOO (OR 5.43, p-value 0.043).

Table 1 Baseline characteristics

Characteristic	Survive beyond 87 days (N=53)		Death within 87 days (N=58)		Univariable analysis		
					OR	95% CI	*p*-value
Gender							
Male	48	48.98	50	50.20	1.54	0.47-5.03	0.478
Female	5	38.46	8	61.54			
Age (years, mean ± SD)	54.2	10.961	55.1	11.563	1.01	0.97-1.04	0.701
BW (kg, mean ± SD)	55.1	10.917	55.3	13.937	1.00	0.97-1.04	0.960
Underlying disease							
Diabetes mellitus	3	6.25	6	10.91	1.84	0.43-7.78	0.409
Hypertension	10	20.83	8	14.55	0.65	0.23-1.80	0.404
COPD	1	2.08	2	3.64	1.77	0.16-20.19	0.644
Renal insufficiency	0	0.00	3	5.45	1.00	-	0.246
Gout	0	0.00	0	0.00			-
Others	1	2.08	1	1.82	0.87	0.053-14.30	0.923

OR: Odds ratio, CI: Confidence interval, BW: Body weight, SD: Standard deviation, COPD: Chronic obstructive pulmonary disease

Table 2 Cirrhosis characteristics

Characteristic	Survive beyond 87 days (N=53)		Death within 87 days (N=58)		Univariable analysis		
					OR	95% CI	*p*-value
Presence of cirrhosis	36	76.60	47	95.92	7.18	1.50-34.44	0.014
Child A	17	36.96	3	6.00			
Child B	25	54.35	25	50.00			
Child C	4	8.70	22	44.00			
Child-Pugh Score					5.57	2.49-12.49	< 0.001
Etiology							
HCV	5	10.64	7	14.29	1.40	0.41-4.76	0.590
HBV	34	72.34	29	59.18	0.55	0.24-1.31	0.177
Alcohol	12	25.53	15	30.61	1.29	0.53-3.15	0.580

OR: Odds ratio, CI: Confidence interval, HCV: Hepatitis C virus infection, HBV: Hepatitis B virus infection

Discussion

According to previous studies, the prognosis of HCC patients depends on factors that are either tumor-related or liver-related. From a systematic review, the most common independent predictors in HCC are PVT, tumor size, and Child-Pugh class[8]. The presence of esophagogastric varices were mentioned in some studies[30, 31]. The treatment strategy is also an important prognostic factor[19]. The studies showed significantly increased survival in patients receiving hepatic resection, transarterial chemoembolization (TACE), percutaneous ethanol injection (PEI), and systemic chemotherapy[10, 19]. Predictors associated with untreated HCC patients are quite different and various. Studies focused different groups of factors: PVT, tumor size, Child-Pugh class[8, 33], serum bilirubin, blood urea, serum alpha-fetoprotein, Okuda stage[16, 18], MELD score, platelet count[15], multi-nodular tumor, female gender, presence of decompensated cirrhosis[32], cough and presence of ascites[33]. We considered most of these factors in our study. Some predictors were consistent with previous studies on univariable analysis.

Table 3 Tumor characteristics

Characteristic	Survive beyond 87 days (N=53)		Death within 87 days (N=58)		Univariable analysis		
					OR	95% CI	*p*-value
Number					1.00	1.00-1.00	0.562
1	20	40.82	27	50.00			
2	7	14.29	2	3.70			
3	3	6.12	1	1.85			
Multiple	19	38.78	24	44.44			
Extrahepatic metas	10	25.00	17	41.46	2.13	0.82-5.48	0.119
PVT	27	57.45	37	68.52	1.61	0.71-3.64	0.251
MPV	14	30.43	22	40.74	1.57	0.69-3.60	0.286
RPV	18	39.13	20	37.04	0.92	0.41-2.06	0.830
LPV	17	36.96	13	24.07	0.54	0.23-1.28	0.164
HVOO	8	17.39	14	25.93	1.66	0.63-4.41	0.307
IVC	4	8.70	10	18.52	2.39	0.69-8.20	0.167
MHV	2	4.35	4	7.41	1.76	0.31-10.1	0.525
RHV	4	8.70	4	7.41	0.84	0.20-3.56	0.813
LHV	2	4.35	3	5.66	1.32	0.21-8.27	0.767

OR: Odds ratio, CI: Confidence interval, PVT: Portal vein thrombosis, MVP: Main portal vein thrombosis, RPV: Right portal vein thrombosis, LPV: Left portal vein thrombosis, HVOO: Hepatic venous outflow obstruction, IVC: Inferior vena cava, MHV: Middle hepatic vein, RHV: Right hepatic vein, LHV: Left hepatic vein

Table 4 Portal hypertension characteristics

Characteristic	Survive beyond 87 days (N=53)		Death within 87 days (N=58)		Univariable analysis		
					OR	95% CI	*p*-value
Signs of portal hypertension	26	55.32	33	61.11	1.27	0.57-2.81	0.556
Splenomegaly	13	28.26	13	24.53	0.83	0.34-2.02	0.674
Massive ascites	11	23.91	31	57.41	4.29	1.80-10.20	0.001
Varices	19	41.30	8	14.81	0.25	0.10-0.64	0.004
Umbilical vein recanalization	4	8.70	1	1.89	0.20	0.02-1.88	0.159
Complications							
EV bleeding	11	22.92	9	17.31	0.70	0.26-1.88	0.485
Rupture	2	4.17	6	11.54	3.00	0.58-15.65	0.192

OR: Odds ratio, CI: Confidence interval, EV: Esophageal varices

Table 5 Tumor Staging

Characteristic	Survive beyond 87 days (N=53)		Death within 87 days (N=58)		Univariable analysis		
					OR	95% CI	*p*-value
CLIP score					1.91	1.32-2.77	0.001
1	5	12.50	0	0.00			
2	10	25.00	3	6.52			
3	8	20.00	13	28.26			
4	9	22.50	9	19.57			
5	8	20.00	14	30.43			
6	0	0.00	7	15.22			
Okuda staging					4.89	2.06-11.64	< 0.001
I	9	19.57	0	0.00			
II	30	65.22	30	57.69			
III	7	15.22	22	42.31			
Maximal diameter (cm)	8.61	4.503	12.55	5.295	1.18	1.07-1.29	0.001
Diameter > 6 cm	7.00	31.820	43.00	57.330	2.88	1.05-7.88	0.040

OR: Odds ratio, CI: Confidence interval, CLIP: Cancer of the liver, Italian Program

Table 6 Biochemical characteristics

Characteristic	Survive beyond 87 days		Death within 87 days		Univariable analysis		
	Mean	SD	Mean	SD	OR	95% CI	*p*-value
Platelets (x103/mcL)	217.03	160.049	255.53	127.407	1.00	0.10-1.00	0.203
SGOT (U/L)	107.91	80.484	225.40	150.860	1.01	1.01-1.02	< 0.001
SGPT (U/L)	64.80	60.625	83.68	76.816	1.00	0.10-1.01	0.189
SGOT/SGPT	2.13	1.204	3.53	2.792	1.55	1.13-2.13	0.007
ALP(U/L)	204.40	90.008	359.83	275.997	1.01	1.00-1.01	0.001
Albumin (g/dL)	3.00	0.815	2.77	0.583	0.63	0.35-1.11	0.109
TB (mg/dL)	1.63	1.914	3.60	3.894	1.34	1.07-1.69	0.012
TB ≥ 3.0	5.00	10.400	17.00	32.080	4.06	1.36-12.09	0.012
INR	1.29	0.267	1.49	0.309	15.03	2.17-103.89	0.006
INR ≥ 1.7	30.00	43.480	8.00	72.730	3.47	0.85-14.19	0.084
AFP (ng/ml)	25876.44	68123.610	58687.01	148191.70	1.00	0.100-1.00	0.224
Cr (mg/dL)	0.98	0.299	1.00	0.455	1.21	0.43-3.42	0.725
Na (mEq/L)	135.26	4.901	133.82	4.094	0.93	0.83-1.03	0.162
MELD score	9.02	4.714	13.73	6.449	1.16	1.06-1.28	0.002
MELD>10	12.00	35.290	25.00	60.980	2.86	1.12-7.35	0.029

OR: Odds ratio, CI: Confidence interval, SD: Standard deviation

Table 7 Multivariable logistic regression analysis

Characteristic	Survive beyond 87 days (N=53)		Death within 87 days (N=58)		Multivariable analysis		
					OR	95% CI	*p*-value
Presence of cirrhosis	36	76.60	47	95.92	21.72	1.83-257.72	0.015
Large ascites	11	23.91	31	57.41	3.38	1.06-10.79	0.04
HVOO	8	17.39	14	25.93	5.43	1.05-27.94	0.043

OR: Odds ratio, CI: Confidence interval, HVOO: Hepatic venous outflow obstructio

However, only 3 liver-related prognostic factors were statistically significant on multivariable analysis: presence of cirrhosis, large ascites, and HVOO.

Cirrhosis is an irreversible liver fibrosis. It is the process of diffuse parenchymal remodeling, including the hepatic vascular architecture. The common causes of cirrhosis are hepatitis B and C, and alcohol consumption. Cirrhosis is the major predisposing condition to HCC[1, 34]. From our study, it was also a predictor of untreated HCC, regardless of severity or etiology. Child-Pugh classification and MELD score were significant prognostic factors in univariable analysis, but not in multivariable analysis. These might tell us that Child-Pugh classification and MELD score cannot be used as the prognostic factors of untreated HCC patients. We might ask why severity has no influence to the prognosis. This might be associated with our sample size being too small.

We used the term 'large ascites' instead of refractory ascites due to the lack of a consistent definition. Large ascites was diagnosed when radiologists reported the imaging result. It was also a predictor of untreated HCC in our study and presented in well-known prognostic systems like Okuda, Child-Pugh, Chinese University Prognostic Index (CUPI), and Japan integrated staging (JIS)[5, 13]. Cirrhosis accounts for 84% of cases of ascites[35]. In our study, not all cirrhotic patients had ascites, and not all patients with ascites had cirrhosis, but the relationship between these two factors was statistically

significant (p-value = 0.005). Ascites in HCC might be related to portal hypertension, which is a contraindication for liver resection or TACE which prevents patients from receiving any treatment[3].

Hepatic venous outflow obstruction (HVOO) is a new prognostic factor that was mentioned in a few studies as a risk factor for HCC[38-43]. HVOO can be defined by obstruction to the venous outflow tracts from hepatic sinusoids to heart[36, 37]. We studied the obstruction of the tract from hepatic veins to superior end of inferior vena cava, either from thrombosis or vascular invasion, and usually widely called Budd-Chiari syndrome (BCS). BCS mostly occurs in myeloproliferative disorders and is uncommonly caused by HCC. It produces a triad of symptoms: upper abdominal pain, hepatomegaly, and ascites and finally cirrhosis developed. In these patients, cirrhosis might further develop to HCC. From this information, we cannot explain whether BCS or HCC comes first.

We did not define which factors (cirrhosis, ascites, and HVOO) developed first or whether it was cause of the others, but all are negative predictors for untreated HCC. A common treatment among the three of them is liver transplantation (LT). Furthermore, LT is one of the curative treatments for HCC. This study could be the starting point for new treatment guidelines for HCC with HVOO, cirrhosis, and ascites. Unfortunately, LT is only occasionally performed in Thailand due to lack of suitable donors. The present study might help to improve palliative treatment plans: with no more diuretics in this group of patients to make them most comfortable at the end of their life.

A strength of this study lies in out inclusion of most of the factors mentioned in previous studies in our multivariable analysis. The limitations are, firstly, that it was a retrospective study. We could not gather all the investigations we needed from the patients. Furthermore, none of the notes recorded patient performance status so we could not categorize patients into the most common worldwide staging, BCLC. Lastly, 12 of 111 patients were actually still alive until the time of the end of data collection. This meant that we used the last seen date to calculate the duration.

Conclusion

In conclusion, the prognostic factors that affect the survival of untreated HCC patients are cirrhosis, large ascites, and HVOO. All of them need to be studied further to establish a curative treatment and help improve the patient's quality of life.

Conflicts of Interest

The author indicated no conflicts of interest.

REFERENCES

1. Jarnagin WR, Allen PJ, Chapman WC, et al, editors. Blumgart's Surgery of the liver, biliary tract, and pancreas. 6th ed. Philadelphia: Elsevier, 2017.
2. Ghouri YA, Mian I, Rowe JH. Review of hepatocellular carcinoma: epidemiology, etiology, and carcinogenesis. J Carcinog 2017;16:1.
3. Omata M, Cheng AL, Kokudo N, et al. Asia-Pacific clinical practice guidelines on the management of hepatocellular carcinoma: a 2017 update. Hepatol Int 2017;11: 317-70.
4. European association for the study of the liver. EASL guidelines: management of hepatocellular carcinoma. J Hepatol 2018 https://doi.org/10.1016/j.jhep.2018.03.019.
5. Liu PH, Hsu CY, Hsia CY, et al. Prognosis of hepatocellular carcinoma: assessment of eleven staging system. J Hepatol 2016;4:601-8.
6. Yau T, Tang VYF, Yao TJ, et al. Development of Hong Kong liver cancer staging system with treatment stratification for patients with hepatocellular carcinoma. Gastroenterology 2014;146:1691-700.
7. สมาคมโรคตับแห่งประเทศไทย. แนวทางการดูแลผู้ป่วยมะเร็งตับในประเทศไทย ปี พ.ศ. 2558. กรุงเทพมหานคร: ภาพพิมพ์; 2558.
8. Tandon P and Garcia-Tsao G. Prognostic indicators in hepatocellular carcinoma: a systematic review of 72 studies. Liver Int 2009;29:502-10.
9. CLIP investigators. Prospective validation of the CLIP score: a new prognostic system for patients with cirrhosis and hepatocellular carcinoma. Hepatology 2000;31:840-4.
10. Okuda K, Ohtsuki T, Obata H, et al. Natural history of hepatocellular carcinoma and prognosis in relation to treatment: a study of 850 patients. Cancer 2006;4:918-28.
11. Primack A, Vogel CL, Kyalwazi S, et al. A staging system of hepatocellular carcinoma: prognostic factors in Ugandan patients. Cancer 2006;35:1357-64.
12. Zeeneldin AA, Salem S, Darwish AD, et al. Untreated hepatocellular carcinoma in Egypt: outcome and prognostic factors. J Hepatocell Carcinoma 2015;2:3-9.
13. Marrero JA, Fontana RJ, Barrat A, et al. Prognostic of hepatocellular carcinoma: Comparison of 7 staging systems in an American cohort. Hepatology 2005;41:707-16.
14. Chan AWH, Chan SL, Mo FKF, et al. albumin-to-alkaline phosphase ratio: a novel prognostic index for hepatocellular carcinoma. Dis Markers 2015 https://doi.org/10.1155/2015/564057.
15. Giannini EG, Moscatelli A, Pellegatta G, et al. Application of the intermediate-stage subclassification to patients with untreated hepatocellular carcinoma. Am J Gastroenterol 2016;111:70-7.
16. Yeung YP, Lo CM, Liu CL, et al. Natural history of untreated nonsurgical hepatocellular carcinoma. Am J Gastroenterol 2005; 100:1995-2004.

17. Sombbon K, Siramolpiwat S, Vilaichone R. Epidemiology and Survival of Hepatocellular Carcinoma in the Central Region of Thailand. Asian Pac J Cancer Prev 2014;15:3567-70.
18. Kim UB, Doo CJ, Baek SH, et al. Natural history and prognostic factors of primary hepatocellular carcinoma: study of 70 untreated patients. Korean J Int Med 1989;4:136-41.
19. Greten TF, Papendorf F, Bleck JS, et al. Survival rate in patients with hepatocellular carcinoma: a retrospective analysis of 389 patients. Bri J Cancer 2005;92:1862-8.
20. Pawarode A, Voravud N, Sriuranpong V, et al. Natural history of untreated primary hepatocellular carcinoma: a retrospective study of 157 patients. Am J Clin Oncol 1998;2:386-91.
21. Imokaw Y, Kuda K, Bo YA, et al. Serum glutamic oxalacetic transaminase/glutamic pyruvic transaminase ratios in hepatocellular carcinoma. Cancer 1977;40:319-24.
22. Chan AWH, Chan SL, Mo FKF, et al. Albumin-to-alkaline phosphatase ratio: A novel prognostic index for hepatocellular carcinoma. Dis Markers 2015 http://dx.doi.org/10.1155/2015/564057.
23. Nouso K, Ito YM, Kuwaki K, et al. Prognostic factors and treatment effects for hepatocellular carcinoma in child c cirrhosis. Br J Cancer 2008;98:1161-5.
24. Child CG, Turcotte JG. Surgery and portal hypertension. Maj Probl Clin Surg 1964;1:1-85.
25. Pugh RN, Murray-Lyon IM, Dawson JL, et al. Transection of the esophagus for bleeding oesophageal varices. Br J Surg 1973;60:646-9.
26. Arizumi T, Minami T, Chishina H, et al. Impact of tumor factors on survival in patients with hepatocellular carcinoma classified based on Kinki criteria stage B2. Dig Dis 2017;35:583-8.
27. Garcia-Tsao G. The Child-Turcotte classification: from gestalt to sophisticated statistics and back. Dig Dis Sci 2016;61:3102-4.
28. Yu YQ, Li J, Liao Y, et al. The preoperative alkaline phosphatase-to-platelet ratio index is an independent prognostic factor for hepatocellular carcinoma after hepatic resection. Medicine 2016; 95(51): e5734 doi: 10.1097/MD.0000000000005734.
29. Kamath PS, Kim WR. The model for end-stage liver disease (MELD): reviews. Hepatology 2007;45(3):797-805.
30. Hsieh WY, Chen PH, Lin IY, et al. The impact of esophagogastric varices on the prognosis of patients with hepatocellular carcinoma. Sci Rep 7:42577 | DOI: 10.1038/srep42577.
31. Giannini EG, Risso D, Testa R, et al. Prevalence and prognostic significance of the presence of esophageal varices in patients with hepatocellular carcinoma. Clin Gastroenterol Hepatol 2006;4:1378-84.
32. Giannini EG, Farinati F, Ciccarese F, et al. Prognosis of untreated hepatocellular carcinoma. Hepatology 2015;61:184-90.
33. Zeeneldin AA, Salem SE, Darwish AD, et al. Untreated hepatocellular carcinoma in Egypt: outcome and prognostic factors. J Hepatocell Carcinoma 2015;2:3-9.
34. Schuppan D, Afdhal NH. Liver cirrhosis. Lancet 2008;371:838-51.
35. Longo DL, Kasper DL, Jameson JL, Fauci AS, Hauser SL, Loscalzo J. Harrison's principles of internal medicine. 18th ed. McGraw Hill; 2012.
36. Bayraktar UD, Seren S, Bayraktar Y. Hepatic venous outflow obstruction: three similar syndromes. World J Gastroenterol 2007;13:1912-27.
37. Shrestha SM. Hepatic venous outflow obstruction: suggestion of a new classification. J Ren Hepat Disord 2017;1:41-51.
38. Moucari R, Rautou PE, Cazals-Hatem D, et al. Hepatocellular carcinoma in Budd-Chiari syndrome:characteristics and risk factors. Gut 2008;57:828-35.
39. Park H, Yoon JY, Park KH, et al. Hepatocellular carcinoma in Budd-Chiari syndrome: A single center experience with long-term follow-up in South Korea. World J Gastroenterol 2012;18:1946-52.
40. Liu FY, Wang MQ, Duan G, et al. Hepatocellular carcinoma associated with budd-chiari syndrome: imaging features and transcatheter arterial chemoembolization. BMC Gastroenterol 2013;13:105.
41. Kao WY, Hung HH, Lu HC, et al. Hepatocellular carcinoma with presentation of Budd-Chiari syndrome. J Chin Med Assoc 2012;73:93-6.
42. Paul SB, Shalimar, Sreenivas V, et al. Incidence and risk factors of hepatocellular carcinoma in patients with hepatic venous outflow tract obstruction. Aliment Pharmacol Ther 2015;41:961-71.
43. Sakr M, Abdelhakam SM, Dabbous H, et al. Characteristics of hepatocellular carcinoma in Egyptian patients with primary Budd-Chiari syndrome. Liver Int 2017;37:415.

บทคัดย่อ **ปัจจัยที่มีผลต่อการตายในผู้ป่วยมะเร็งตับที่ไม่ได้รับการรักษา**

พลอยทิพย์ จันทร์ศิริโยธิน, พ.บ., อนุวัชช์ จันทร์ทิพย์, พ.บ.

กลุ่มงานศัลยกรรม โรงพยาบาลลำปาง

ความเป็นมา: มะเร็งตับเป็นโรคที่เป็นสาเหตุการตายอันดับต้นๆ ของประเทศไทย การพยากรณ์โรคขึ้นกับสภาพของผู้ป่วย สภาพตับ และลักษณะของมะเร็ง การศึกษาการพยากรณ์โรคในผู้ป่วยมะเร็งตับที่ไม่ได้รับการรักษายังมีจำนวนไม่มาก รวมไปถึงการศึกษาถึงปัจจัยที่มีผลต่อพยากรณ์โรคในผู้ป่วยกลุ่มนี้ยังมีน้อย

วัตถุประสงค์: เพื่อศึกษาปัจจัยที่มีผลต่อการตายในผู้ป่วยมะเร็งตับที่ไม่ได้รับการรักษาในโรงพยาบาลลำปาง จ.ลำปาง

วัสดุและวิธีการ: เป็นการศึกษาย้อนหลังจากการทบทวนเวชระเบียนของผู้ป่วยมะเร็งตับ ช่วงปี 2554-2559 ผู้ป่วยที่ข้อมูลไม่ครบ วินิจฉัยผิด หรือได้รับการรักษาจะถูกคัดออกจากการศึกษานี้ ข้อมูลของผู้ป่วยถูกรวบรวมและวิเคราะห์เพื่อค้นหาปัจจัยที่มีผลต่อการตาย

ผลการศึกษา: ผู้ป่วยมะเร็งตับที่ไม่ได้รับการรักษาจำนวน 111 คน ถูกคัดเลือกเข้าทำการวิเคราะห์ median survival rate ในผู้ป่วยกลุ่มนี้เท่ากับ 87 วัน (2.9 เดือน) โดยจากการวิเคราะห์แบบ multivariable พบว่า ตับแข็ง (cirrhosis) ภาวะท้องมาน (large ascites) และการอุดตันของหลอดเลือดดำ (hepatic venous outflow obstruction: HVOO) เป็นปัจจัยที่ส่งผลต่ออัตราการตาย

สรุปผลการศึกษา: ผู้ป่วยมะเร็งตับที่ไม่ได้รับการรักษาเป็นผู้ป่วยที่มีพยากรณ์โรคที่ไม่ดี โดยมีปัจจัยที่ส่งผลต่อพยากรณ์โรค ได้แก่ ตับแข็ง ภาวะท้องมาน และการอุดตันของหลอดเลือดดำ