Predictive value of Khorana score for VTE risk in BTC patients

충남대학교 의과대학 혈액종양내과교실

*서원형, 류혜원, 조덕연, 이효진, 송익찬, 최윤석, 이명원
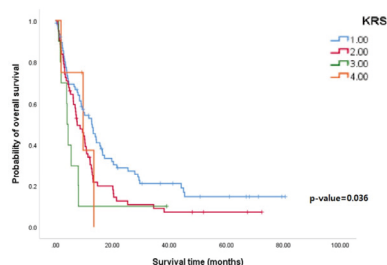
Background/Aims: Venous thromboembolism (VTE) is a major cause of morbidity and mortality in cancer patients, especially undergoing chemotherapy. Due to rarely of biliary tract cancers (BTC), the incidence of VTE in this population are not well-described. We aimed to investigate the incidence of VTE and validate Khorana score to predict VTE. **Methods:** We conducted a retrospective study of patients with BTC identified by the cancer registry at Chungnam National University Hospital between January 2012 to January 2019 who treated with palliative chemotherapy. We used Khorana score model to estimate VTE during chemotherapy by use of two clinical variables (tumor site and BMI) and three laboratory measurement (platelets, hemoglobin, and leukocytes). Total 153 BTC patients' medical records were reviewed for demographics, tumor characteristics, treatment history, Khorana score and VTE events. **Results:** 153 patients with BTC were identified (74 cholangiocarcinoma, 79 GB). 93 (60.1%) were men. The median age at diagnosis of 67 years (range 42 - 82). 20 (12.6%) patients had VTE events. The median time from cancer diagnosis to VTE event was 118 days. Patients with cholangiocarcinoma had greater risk of VTE than patients with gallbladder cancer (Odd ratio: 5.9, 95% CI 1.62 – 21.5). Khorana score did not predict VTE risk in biliary tract cancer. However, patients with high Khorana score had an inferior OS compared to those with low Khorana score significantly (p=0.762) **Conclusions:** VTE is commonly observed in patients with BTC. Khorana score did not predict VTE incidence, however, it could be used as a prognostic factor for OS in patients with biliary tract cancer who receiving palliative chemotherapy.

Table 1. Patient characteristics

		Non-VTE(n)	VTE(n)	VTE (%)	
Age	<=65 yr	61	6	9	p=0.454
	>65 yr	75	11	12.8	
Sex	Female	52	8	13.3	p=0.482
	Male	84	9	10.3	
BMI	<=28(kg/m2)	129	16	11	p=0.353
	>28 (kg/m2)	7	0	0	
ECOG	0-1	123	16	11.5	p=0.932
	1	7	1	12.5	
Status	Advanced	55	6	9.8	p=0.683
	Recurred	81	11	10.2	
Metastasis	One site	34	3	8.1	p=0.438
	More than one	95	14	12.7	
Cancer origin	GB cancer	76	3	3.8	p=0.003
	Bile duct	60	14	18.9	

Table 2. VTE incidence rate estimate according to Khorana score

Khorana score	1(n=77)	2(n=62)	3(n=10)	4(n=4)	5(n=0)	p-value=0.762
Non-VTE(n)	67	55	10	4	0	
VTE(n)	10	7	0	0	0	
%	13%	11.3%				

Khorana score	1(n=77)	2(n=62)	3(n=10)	4(n=4)
Median-OS(month)	23	14	8	9

Figure 2. Kaplan-Meier plots of survival until the death of patient or observed period in association with Khorana score points