COMPARISON OF KHORANA AND COMPASS-CAT SCORES FOR PREDECTING CANCER PATIENT'S RISK OF THROMBOEMBOLIC DISEASE

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Introduction

Venous thromboembolism (VTE) is a common complication in cancer patients, resulting from various mecanisms related to : the cancer, the anti-tumor therapies and to the patient itself.
It is associated with poor prognosis and constitues a major cause of death **(1).**

Several risk assessment models (RAM) were developed to help predict the occurrence of VTE in cancer patients on active anti-cancer therapy,
The most used is the KHORANA score, but it has limitations and does not take into account all the risk factors associated with VTE, which can lead to an underestimate this risk.
Hence COMPASS -CAT score may compensates this limitation **(2).**

The aim of our study is:
-    To describe the epidemiological and clinico-pathological characteristics of cancer patients who developed VTE.
-    To compare the prediction of VTE risk given by the KHORANA and COMPASS-CAT scores.

Methods

This is a retrospective study of 50 patients followed for cancer belonging to the COMPASS-CAT score category (lung, colorectal, breast and ovary), who developed VTE during their therapeutic follow-up.

The KHORANA score was calculated before the start of treatment.

The COMPASS-CAT was calculated during the VTE incident.

Results

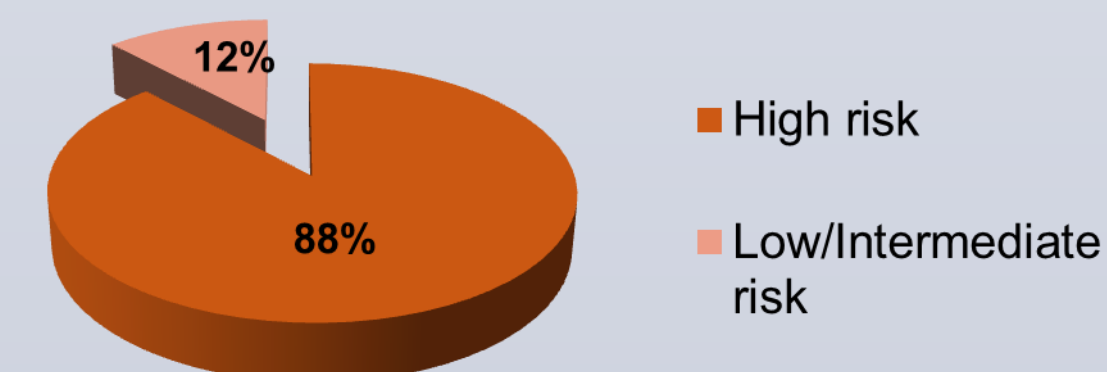Our study included 50 patients whose characteristics are summarized in Table 01.

Patients Characteristics	
Age, y, median [range]	60 [38-83]

Sex
   Male
   Female
	
	26 (52%)
	24 (48%)

History of VTE
   No
   Yes
	
	47 (94%)
	3 (6%)

Location of cancer
   Lung
   Colorectal
   Breast
   Ovary
	
	20 (40%)
	13 (26%)
	13 (26%)
	4 (8%)

Stage of cancer
   Localised
   Metastatic
	
	23 (46%)
	27 (54%)

VTE Characteristics	

Time of occurrence (% cancer dg)
   Revealing the cancer
   < 6 mois
   > 6 mois
	
	16 (32%)
	28 (56%)
	6 (12%)

VTE type
   Deep-vein thrombosis (DVT)
   Pulmonary embolism (PE)
   Both
	
	31 (62%)
	10 (20%)
	9 (18%)

Table 01 : Patients and VTE characteristics

The distribution of the KHORANA score was as follows:

- High risk — 40%
- Intermediate risk — 36%
- Low risk — 24%
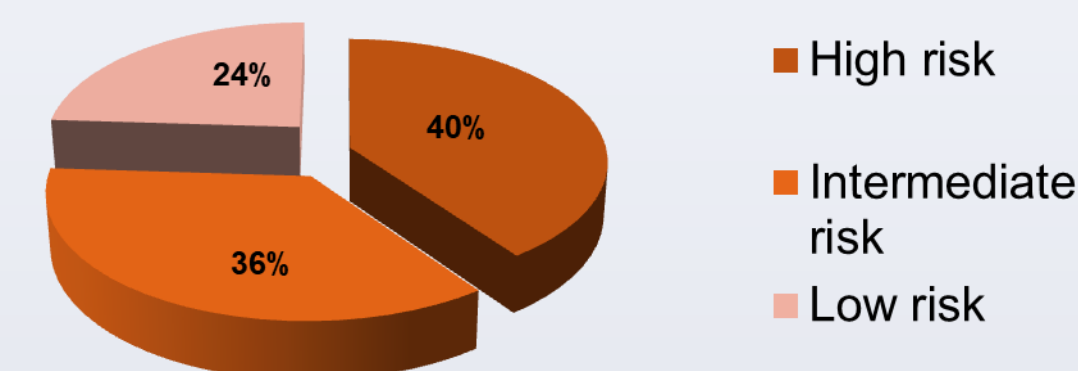
The distribution of the COMPASS-CAT score was as follows:

- High risk — 88%
- Low/Intermediate risk — 12%

Discussion

The association between VTE and cancer is well known and has high morbidity and mortality.

Despite this observation, systematic VTE risk stratification in all cancer patients is not yet common practice neither is the thromboprophylaxis.

Several risk assessment models were developed to predict this incident based on the risk factors of VTE in cancer patients.

The KHORANA score is only determined prior to the initiation of therapy; it does not account for the treatment's related risk factors and could underestimate the likelihood of VTE occurrences.

Unlike COMPASS-CAT can be calculated during treatment where it consider therapeutic risk factors including: surgery, hospitalizations, central venous devices and systemic treatments

In our group of study, compared to Khorana score, COMPASS-CAT score was better in identifying more patients in high-risk group, with higher VTE rate.

The KHORANA score remains the most cited in the recommendations with case-by-case discussions of thromboprophylaxis with oral anticoagulant drug in high scores **(3).**

Given the applicability after initiation treatment, ASCO and AFSOS recommendations mention the interest of the COMPASS-CAT score in better distinguishing patients at high or low risk **(3, 4)** .

References

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(3) David Malka, et al., « Prévention et prise en charge des thromboses associées au cancer: questions pratiques à propos de l'anticoagulation », Bulletin du Cancer, 110-2, 2023, p. 212-224.
(4) Nigel S. Key et al., Venous Thromboembolism Prophylaxis and Treatment in Patients With Cancer: ASCO Clinical Practice Guideline Update, JCO 38, 2020, p. 496-520.