

Associated factors affecting recurrence of Venous Thromboembolism and Bleeding in Cancer patients with Venous Thromboembolism in Korea

Jin-Hyoung Kang^{1*}, Ha-Young Gil², Young-Joo Kim², Juneyoung Lee³

1 Medical Oncology, Department of Internal Medicine, Seoul St. Mary's Hospital, The Catholic University of Korea College of Medicine, Seoul, Korea
2 Outcomes Research/Real World Data team, Pfizer Pharmaceuticals Korea Ltd., Seoul, Korea
3 Department of Biostatistics, Korea University College of Medicine, Seoul, South Korea

Background and Objectives

- Treatment guidelines for cancer VTE(Venous Thromboembolism) patients are established, but a treatment gap between real-world practice and clinical guidelines has been reported.¹
- Finding the factors that affect recurrence of VTE and bleeding in cancer VTE patients can play an important role in developing more practical guidelines for cancer VTE patients.
- We aimed to identify the associated factors affecting recurrence of Venous Thromboembolism and Bleeding in Cancer patients with VTE in Korea.

Methods

- Data for this analysis was from a retrospective cohort study conducted at 8 nationwide, tertiary hospitals of Korea from 2013 to 2015.
- Patients who aged ≥19 years, have active cancer, cancer-associated deep vein thrombosis or pulmonary embolism, and on anticoagulants, were enrolled and observed for 1 year.
- Data was extracted from the medical chart. Patients demography, clinical characteristics, treatment patterns were considered as potential factors in this analysis.
- To assess factors associated with clinical outcomes, performed competing risk analysis using SAS version 9.4.

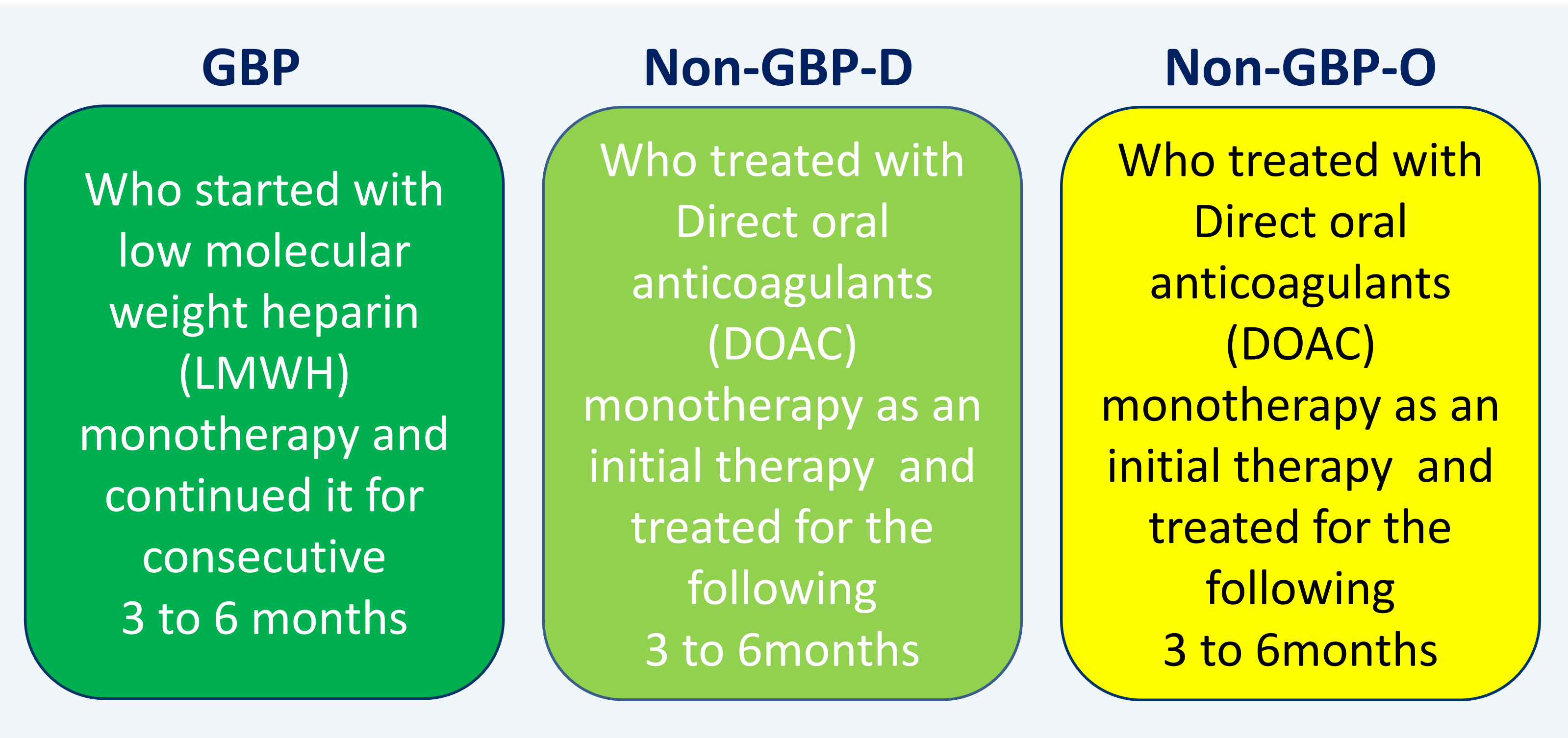


Figure 1. Classification of treatment patterns

- Treatment patterns were classified into 3 patterns. Guideline-Based Practice (GBP) started with low molecular weight heparin (LMWH) monotherapy and continued it for consecutive 3 to 6 months; non-GBP-Direct oral anticoagulants (DOAC) (non-GBP-D) group initial anticoagulant was DOAC monotherapy and treated for the following 3 to 6 months; non-GBP others (non-GBP-O) the remaining treatment patterns other than GBP and non-GBP-D. (Figure 1)

Results

- Total 623 patients (age:63.7±11.3, male:49.3%) after excluding 125 patients who lost follow-up, died, and discontinued VTE treatment pattern within the first 3 months were included in this analysis.
- Overall, 19.1% of patients (n=119) were GBP, while 21.2% (n=132) and 59.7% (n=372) were non-GBP-D and non-GBP-O, respectively.
- The risk factors associated with VTE recurrence were ECOG performance status 1,2 (HR: 0.49, $p<0.01$) compared to ECOG performance status 0, creatinine clearance (Crcl) ($30.0 \leq \text{Crcl} (\text{mL/min/1.73m}^2) < 50.0$) (HR: 0.29, $p=0.011$) compared to $\text{Crcl} \geq 80.0$ and the involvement of main pulmonary artery in initial VTE (HR: 1.82, $p=0.024$). (Figure 2)
- Meanwhile, no insertion of central catheter (HR:0.53, $P<0.01$) was negatively associated with bleeding occurrence and treating VTE with anticoagulants defined as in non-GBP-O increased bleeding risk 3.59 fold higher than GBP ($P<0.01$). (Figure 3)

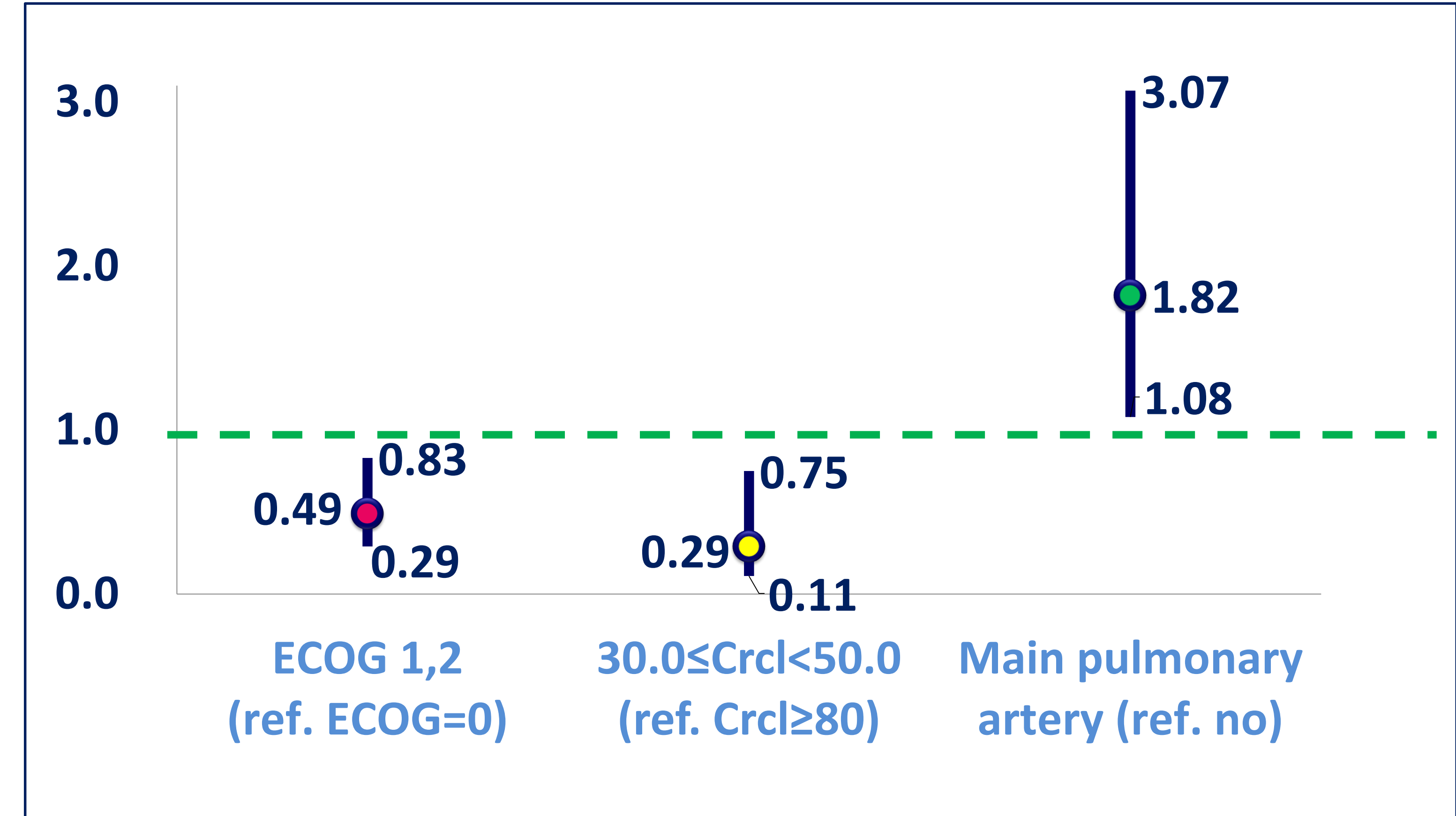


Figure 2. Hazard Ratios of risk factors associated with VTE recurrence

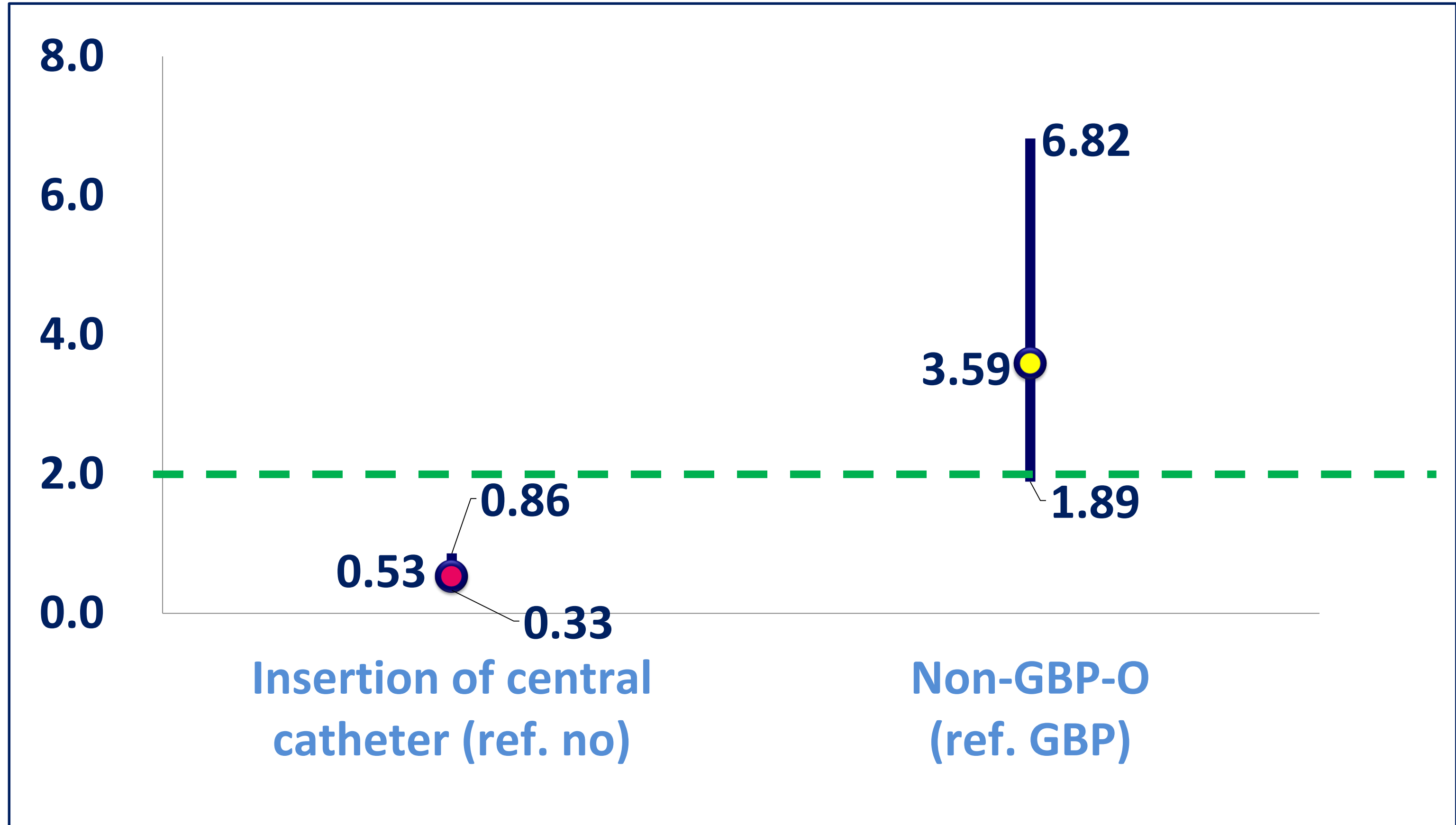


Figure 3. Hazard Ratios of risk factors associated with Bleeding

Conclusions

- This analysis identified several factors associated with clinical outcomes of VTE recurrence, and bleeding in cancer patients with VTE.
- These results can be concrete evidence to support previous study findings. Those defined factors should be considered in development of treatment strategy for patients' better outcomes.

References

1. Wittkowsky AK. Barriers to the long-term use of low-molecular weight heparins for treatment of cancer-associated thrombosis. J Thromb Haemost 2006; 4(9): 2090-2091.