Effect of Routine Thromboprophylaxis with Low Molecular Weight Heparin in Hospitalized Covid-19 Patients

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July 23, 2021

Abstract

Background: Coronavirus disease 2019 (COVID-19) is commonly complicated with coagulopathy presented with venous thromboembolism and arterial thromboses. The aim of this study was to evaluate the effect of routine thromboprophylaxis with low molecular weight heparin (LMWH) on clinical outcomes including mortality and need for intensive care unit (ICU) admission in hospitalized COVID-19 patients. Methods: All confirmed patients with COVID-19 hospitalized to COVID-19 dedicated wards, from March 15 to May 15, 2020, were included in this retrospective cohort study. Two groups of patients were established, according to the non-routine and routine application of LMWH with therapeutic, weight-based, anticoagulation dosing. Clinical, laboratory and treatment data were collected, analyzed and compared between the two groups. A logistic regression model was developed to assess the factors related to in-hospital adverse outcomes. Results: A total of 1511 patients (797 men, median age 59.0 years) were retrospectively analyzed (Group non-routine LMWH (n=828); group routine LMWH (n=683)). Multivariate logistic regression analysis showed routine use of LMWH, favipiravir administration, extreme values of WBC count, NLR, and troponin I as factors independently associated with in-hospital adverse outcomes (OR=0.25, 95% CI: 0.83-0.91; p<0.001 for routine use of LMWH). Conclusion: Routine thromboprophylaxis with LMWH reduced mortality and ICU admission in patients admitted with COVID-19 infection.

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Initial D-dimer value coparison within groups

Initial NLR comparison within groups

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In-hospital adverse outcomes