Usefulness of low-dose direct oral anticoagulants for peripheral deep vein thrombosis of the lower extremities in cancer patients with cancer bleeding lesions

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Background: Venous thromboembolism (VTE) is a frequent complication in cancer patients. VTE is often detected as asymptomatic peripheral deep vein thrombosis (DVT). Standard doses of anticoagulants are generally considered difficult to administer in cancer patients due to the high risk of bleeding.

However, it has been reported that peripheral DVT worsening to proximal DVT in cancer patients due to increased coagulation tendency, and some strategy for peripheral DVT is required. And the adverse bleeding effects of DOACs have been reported to be dose-dependent.

Purpose: The aim of this study was to determine the optimal treatment strategy of peripheral DVT in patients with bleeding cancer lesions. In order to do this we compared no anticoagulation, low-dose direct oral anticoagulants (DOACs) and standard-dose DOACs in patients with and without bleeding cancer lesions.

Methods: A total of 224 consecutive patients with peripheral DVT of the lower extremities (excluding pulmonary thromboembolism or proximal DVT) were included from April 2019 to March 2020. Of these, 172 patients could be followed up by repeated ultrasound examinations for up to 2 years. We investigated retrospectively the change in ultrasound findings between first and second examinations (median interval 44 days).

163 patients were studied, excluding 9 patients who used warfarin or heparin.

In 119 of these DOACs were applied, and 44 were without anticoagulation.

If the treatment procedure had changed between the first and second ultrasound examinations main treatment procedure was selected and categorized.

Results: All the patients of low-dose and standard-dose DOACs groups had no major bleeding during follow up period.

In the group with cancer bleeding lesion (n=45) there were 12 patients (70.1%) worsening DVT in the group without anticoagulation, 1 patient (4.3%) in the low-dose DOACs and 0 (0%) in the standard-dose DOACs group.

There was significant worsening of DVT in the no anticoagulant group compared with low-dose DOACs (P<0.0001), but no significant difference between low-dose DOACs and standard-dose DOACs (P=0.63) in the group with bleeding (see Figure 1).

In the group without cancer bleeding (n=118), worsening of DVT occurred in 16 patients (59.3%) without anticoagulation, in 6 patients (16.7%) with low-dose DOACs and in 4 patients (7.3%) with standard-dose DOACs.

There was significant worsening of DVT in the no anticoagulant group compared with low-dose DOACs (P<0.0001), but no significant difference between the low-dose and standard-dose DOACs (P=0.16) in the group without bleeding (see Figure 2).

Conclusion: Low-dose DOACs were found to be as effective as standard-dose DOACs in treating peripheral DVT in cancer patients, with or without bleeding of the cancer lesion.

Peripheral DVT treatment with low-dose DOACs can reduce worsening of DVT and should be one of the supportive treatments for the completion of cancer management.
DVT in 3 groups with cancer bleeding

DVT in 3 groups without cancer bleeding