Cerebral infarction accompanied by cerebral bleeding in patients receiving apixaban

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DESCRIPTION
Apixaban is a novel anticoagulant (NOAC) that is superior to warfarin in preventing stroke and minimising bleeding.1 A 58-year-old man was admitted to our hospital for congestive heart failure (CHF) due to a recent myocardial infarction. He had diabetes, hypertension, persistent atrial fibrillation and renal dysfunction. He had no history of hepatitis but was a past heavy drinker. Percutaneous coronary intervention was performed using a second generation drug eluting stent, and administration of 100 mg aspirin, 75 mg clopidogrel and 5 mg apixaban was started. His CHADS2-VASc (CHF, hypertension, diabetes mellitus and vascular event) score was 4. After 4 months, he complained of dizziness for 3 weeks. Neurological findings apart from dizziness were not observed. MRI revealed a subacute cerebral infarction with haemorrhage at the right temporal lobe (figure 1A, B) without haematoma on CT (figure 1C). The HAS-BLED score was 1 (antiplatelet drug). However, careful reassessment before starting apixaban revealed that prothrombin time was slightly prolonged (figure 2). With a decreased platelet count, liver dysfunction was suspected. Finally, CT revealed decreased liver volume and the presence of liver cancer. CHF often accompanies liver dysfunction.2 Liver function was carefully examined as apixaban is partially metabolised to CYP3A4/5 in the liver. Because the risk of cerebral infarction and intracranial haemorrhage during NOAC treatment seems to be small to moderate,13 mild symptoms without neurological deficit may need to be carefully assessed. Apixaban and aspirin were continued, and clopidogrel was discontinued, taking into consideration the risks and benefits.

Figure 1 (A, B) High intensity on T2 weighted (A) and low intensity on T1 weighted (B) MRIs, indicating subacute haemorrhage accompanied by cerebral infarction. (C) CT image.

Before administration

<table>
<thead>
<tr>
<th>Bp (mmHg)</th>
<th>ALT (U/L)</th>
<th>APTT (s)</th>
<th>PT (INR)</th>
<th>Cre (mg/dl)</th>
<th>BUN (mg/dl)</th>
<th>AST (U/L)</th>
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<td>1.25</td>
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<td>7.2</td>
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At onset

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<th>APTT (s)</th>
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<td>7.2</td>
<td>3.6</td>
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Figure 2 Summary of laboratory findings. ALB, albumin; ALT, alanine aminotransferase; APTT, activated partial thromboplastin time; AST, aspartate transaminase; Bp, blood pressure; BUN, blood urea nitrogen, Cre, creatinine; PLT, platelet; PT, prothrombin time; T-chol, total cholesterol; TP, total protein.
Learning points

▸ Due to administration of new drugs, complications related to apixaban administration are seldom encountered by the next cardiologist; hence experiences should be shared between cardiologists.

▸ Because the risk of cerebral infarction and intracranial haemorrhage during novel anticoagulant treatment seems to be small to moderate, mild symptoms without neurological deficit may also need to be examined during follow-up.

▸ Liver function, along with renal function, should be carefully assessed and monitored during apixaban treatment.

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Competing interests None.

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REFERENCES

