

Apixaban blood levels reduced by the use of CytoSorb added to cardio-pulmonary bypass

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Background

Nowadays the new direct oral anti-coagulant (DOAC) Apixaban is largely used for its safety and effectiveness. However, it exposes the patient who require urgent surgery to an higher risk of bleeding. This report aims to describe the effects of the CytoSorb® device added to cardio-pulmonary bypass (CPB) in an urgent atrial myxoma resection in a patient anti-coagulated with Apixaban.

Methods

We report a case of a 65-year-old woman treated with Apixaban underwent cardiac myxoma resection followed by patch application.

The patient stopped the treatment with Apixaban 48 hours before surgery and then Anti-factor Xa levels were measured. Anti-factor Xa peri-operatively levels were 34,6 ng/ml and this was considered not exposing the patient to higher risk of bleeding by our expert of hemostasis and thrombosis.

Nevertheless, a thromboelastographic control performed with Quantra® device showed abnormalities in the coagulation (CT 207 s) due to the presence of some anti-coagulant still in blood circulation.

A CytoSorb® cartridge was added to the CPB in order to reduce the cytokine and IL-6 blood levels which increase during the mobilization of the myxoma and with the aim to increase Apixaban clearance. The duration of CPB was 95 minutes during which the patient was anti-coagulated as usual with non-fractionated heparin reaching an Activated Clotting Time (ACT) of 480 seconds. After CPB weaning the heparin was antagonized by the protamine until a regular ACT (145 s).

Results

The last thromboelastographic Quantra® control showed a normalization of coagulation (CT 119 s). The contextual Anti-factor Xa levels dosage was 18 ng/ml.

Conclusion

This case report confirms that the addition of CytoSorb® to CPB for a duration of 95 minutes allows a reduction in Apixaban blood levels which do not interfere with the coagulation and allow a regular hemostasis with minimal postoperative bleeding, without needing for transfusions of blood products. For all these reasons it may represent an intraoperative treatment strategy in Apixaban-treated patients undergoing emergent cardiothoracic surgery.