Editorial

Dealing with perioperative antiplatelet treatment for transurethral resection of the bladder: primum non nocere

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The number of patients receiving antithrombotic treatment is increasing (1), thus increasing the number of patients under anticoagulant or antiplatelet treatment scheduled to undergo endo-urology surgery. Perioperative management of antithrombotic treatment is a matter of debate, based on the trade-off between the risk of cardiovascular event and the risk of perioperative bleeding. There are no formal guidelines and only few studies have addressed this issue, particularly for transurethral resection of the bladder (TURBT). The study recently published by Prader *et al.* in *Journal of Endourology* (2) is a non-inferiority monocentric retrospective study evaluating the mean length of stay between 2 groups of patients treated with TURBT: patients receiving antiplatelet therapy before surgery and patients naïve of treatment. Overall, 117 consecutive patients were included in each arm. Patients receiving anticoagulant were excluded. As expected, patients receiving antiplatelet treatment were significantly older (79 *vs.* 66 years), with significantly more comorbidity (hypertension, coronary artery disease, atrial fibrillation, diabetes, dyslipidemia, stroke). This population was more frequently operated on under regional anesthesia (43% *vs.* 27%). Interestingly, patients under antiplatelet had significantly smaller and lower stage bladder tumors, which could be explained by earlier diagnosis in relation with hematuria. In the antiplatelet group, only 18% of the patients had treatment cessation before surgery, the other being withheld or relayed by low-dose aspirin. Overall, 80% of the patients were operated on under aspirin 75 mg. The study showed that the mean length of stay after TURBT in patients receiving antiplatelet therapy before surgery was significantly longer compared to patients naïve of treatment (2.9 *vs.* 2.3 days, P=0.024). However, the difference didn't reach the predefined 1-day difference to make it clinically relevant. Furthermore, subgroup analysis demonstrated that aspirin didn't lead to a significant difference in the length of stay, whereas clopidogrel was associated with longer stay in hospital. Although the numbers were limited, patients receiving clopidogrel (N=32) were also at higher risk of transfusion (13%), failure of Folley catheter removal (22%), reintervention for hemostasis (13%) and cardiovascular/neurovascular event (3.1%).

During TURBT, significant intraoperative or immediate postoperative bleeding occurs in 2–13% of the patients in the literature and it is the most common complication (3). Antithrombotic treatment is a major risk factor. However, the risk of thromboembolic complications in case of cessation could exceed the risk of bleeding associated with the procedure. In order to compare the effect of maintenance or interruption of aspirin before surgery, the STRATAGEM (Strategy for Managing Anti-platelet Therapy in the Perioperative Period of Non Coronary Surgery) trial compared the cumulative rates of major thrombotic and bleeding events at 30 days postoperatively

in patients randomized to aspirin 75 mg daily (N=145) or placebo (N=146) (4). Patients were receiving antiplatelet therapy for secondary prevention of coronary artery disease, stroke, transient ischemic attack or peripheral vascular ischemic disease and undergoing elective intermediate or high-risk elective non-cardiac surgery, including 15.5% of urologic procedures. While the study was underpowered, there was no significant difference in major thrombotic or bleeding events between preoperative maintenance or interruption. Major adverse events occurred in 31 patients (10.7%), including 6 thromboembolic events in the aspirin group and 5 in the placebo group, 10 bleeding events in the aspirin group and 10 in the placebo group.

In the study published by Prader *et al.* the results were concordant with only 2 thrombotic events and 4 hemorrhagic events requiring reintervention in the antiplatelet group, of whom 80% had TURBT under low-dose aspirin. Other studies also found that continued use of antiplatelet therapy was not associated with an increased risk of bleeding or reintervention (5). In a recent review of the literature, Naspro *et al.* even suggested that grade and stage may have a greater influence on transfusion requirements than concomitant antithrombotic treatment (6). Furthermore, it has even been demonstrated that the highest cardiovascular risk occurs immediately after abrupt interruption of antiplatelet therapy, causing platelet rebound, inflammatory and prothrombotic state, which promotes platelet aggregation (7). Consequently, in most cases, low-dose aspirin can be continued perioperatively without a significantly increased risk of major bleeding. However, clopidogrel is a much more powerful antiplatelet therapy and relay with aspirin 5 days before TURBT is usually the rule to prevent bleeding complications. As pointed by the authors, due to the hepatic transformation into active form, there is an important variability in the metabolism that could explain a higher risk of bleeding is some patients bridged with aspirin. While high-level of evidence is missing, clinical guidance should be based on a risk-adapted strategy, involving urologists, anesthesiologists and cardiologists. Most of the currently available literature support continuation of aspirin in patients undergoing TURBT. More evidence should be generated to evaluate the optimal duration of clopidogrel withdrawal.

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Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

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