

Microangiopatie trombotiche

PERIOPERATIVE CHALLENGES IN ACQUIRED THROMBOTIC THROMBOCYTOPENIC PURPURA DURING CAPLACIZUMAB TREATMENT

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Background. Acquired Thrombotic Thrombocytopenic Purpura (aTTP) is a life-threatening thrombotic microangiopathy caused by autoantibodies to a disintegrin and metallopeptidase with thrombospondin type 1 motif 13 (ADAMTS13), the specific von Willebrand Factor (VWF) cleaving protease. Treatment consists of daily plasma exchange (PEX), Caplacizumab (Capla) and immunosuppressive therapy (steroids +/- rituximab). Capla shortens time to normalization of platelet count and reduces recurrences but increases bleeding risk. VWF activity may be useful to estimate in vivo Capla effect. The management of bleeding during Capla involves discontinuation of the drug and, if necessary, FVIII/VWF concentrate administration. In case of invasive procedure, a 7-days suspension is recommended; in emergency setting, FVIII/VWF concentrate may be considered to correct hemostasis.

Case report. This is a case of a 68 years-old male with relapsing aTTP, presented to the emergency department on March 25 for dark urine and ecchymoses after an infectious episode. His blood test showed severe thrombocytopenia (9.000/ul), undetectable haptoglobin, elevated lactate dehydrogenase and indirect bilirubin. Undetectable ADAMTS13 activity (<0.2%) confirmed aTTP relapse and standard treatment was immediately started (prednisone 1mg/kg/day, daily PEX, Capla 10mg before and after first PEX and 10mg/day from day 1). Given the relapse, rituximab 375mg/sm/week x4 was started on day +4. The therapy led to a rapid normalization of platelet count and hemolysis markers. PEX was discontinued on day +3 (4 sessions in total). The patient was discharged on day +6, with ADAMTS13 activity still undetectable (<0.2%), continuing Capla and prednisone at home. On day +11 (II rituximab) hematologic response was confirmed with low ADAMTS13 activity (0.4%), Capla was continued and III rituximab was scheduled for day +18. On day +15, the patient presented to the emergency department for acute renal colic. Urology consultant confirmed indication for surgical intervention given the size of ureteral stone. Following a multidisciplinary discussion, it was decided to proceed with ureteral stenting, postponing surgery until ADAMTS13 recovery. As the procedure was urgent, it was decided to proceed by administering antihemorrhagic prophylaxis with FVIII/VWF concentrate (Fanhdi). ADAMTS13 activity and VWF activity were 18% and 30% respectively; Fanhdi 25 IU/kg was administered before surgery without bleeding complications. Given the excellent trend in ADAMTS13 activity, Capla was not resumed to reduce post-procedural bleeding risk. ADAMTS13 activity was reassessed on day +19, confirming a complete response (40%) and the definitive Capla discontinuation. Rituximab was performed on day +18 and +25. Definitive surgical treatment was performed in June 2025.

Conclusions. This case provides several insights for optimizing Capla therapy in complex settings: first, FVIII/VWF concentrate proved to be safe and effective in preventing perioperative bleeding during Capla; second, VWF activity may be useful in guiding decisions regarding the dose of FVIII/VWF concentrate to be administered; third, early use of rituximab enabled a rapid increase in ADAMTS13 activity, allowing for early discontinuation of Capla and further reducing the risk of postoperative bleeding. In conclusion, the support of a laboratory capable of rapidly providing reliable tests is essential to optimize the management of these complex scenarios.