



POST-PARTUM ACUTE KIDNEY INJURY: SORTING PLACENTAL AND NON-PLACENTAL THROMBOTIC MICROANGIOPATHIES USING THE TRAJECTORY OF BIOMARKERS

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Context: Among the severe complications of preeclampsia, acute kidney injury (AKI) poses a dilemma if features of thrombotic microangiopathy (TMA) are present. Although a HELLP syndrome is considerably more frequent, ruling out a flare of atypical haemolytic and uremic syndrome (HUS) is then of utmost importance.

Objective: to improve the differential diagnosis procedure in cases of post-partum AKI.

Methods: a hundred and five cases of post-partum AKI, admitted in the last five years (2011-2015) in French ICU from 9 different regions, were analysed. Initial and final diagnosis, renal features, haemostasis and TMA parameters were all analysed, paying a special attention to their dynamics within the first days following the delivery.

Results: The main circumstances of AKI were severe preeclampsia (n=40), post-partum haemorrhage (PPH, n=20) and primitive TMA (n=14, including 10 atypical HUS and 4 thrombotic thrombocytopenic purpura). Among the thirteen cases of renal cortical necrosis, 11 were associated with preeclampsia. Congruence between the initial and the final diagnosis was low (63%). Thus, none of the women referred to our centers for a suspicion of non-placental TMA has received a final diagnosis of non-placental TMA (and instead had a PE or a PPH). Conversely, all women with a final diagnosis of non-placental TMA were referred for a suspicion of PE-related TMA, or with a PPH which polluted the diagnosis. Tranexamic acid was largely used in the context of PPH (82%), at a dose up to 5 grams total. Taking into account the final diagnosis, we subjectively concluded that plasma exchanges and eculizumab were abusively indicated in 5 and 2 cases, respectively, of typical HELLP syndrome. Plasma exchanges were initiated in all 14 cases, a mean 84 hours following the admission. Dynamics of hemoglobin, haptoglobin, and liver enzymes were poorly discriminant. The dynamic pattern of LDH and of platelets, in contrast, was statistically different between primitive TMA-related AKI and other groups: at day 3, platelets increased in preeclamptic women, and in other circumstances, but not in patients with primitive TMA. A classification and regression tree (CART) independently confirmed the usefulness of platelets and LDH trajectory in the diagnostic algorithm.

Conclusion: the trajectory of LDH and platelet count is useful to identify the cause of post-partum AKI, and the clinician may reasonably take therapeutic decisions at day 3 post-delivery.

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