Management of Postpartum Hemorrhage with IV DDAVP in a Parturient with HELLP syndrome

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Introduction: Severe preeclamptic patients have been shown to have both in vivo and in vitro platelet dysfunction.(1,2) We present a case of postpartum hemorrhage in a patient with HELLP syndrome who was successfully managed with IV DDAVP administration.

Case: 33 yo nulliparous parturient at 35.1 weeks gestation presented for induction of labor for HELLP syndrome. Initial laboratory testing showed a platelet count of 106,000/μL, ALT/AST of 155/175 U/L, and normal coagulation parameters; she denied any bleeding diathesis. After careful discussion with the obstetric team, it was decided to place an epidural catheter early in labor. During the intrapartum course, her platelet count decreased to 56,000/μL prior to epidural catheter placement, and reached a nadir of 41,000/μL immediately prior to delivery. After spontaneous vaginal delivery, she experienced postpartum hemorrhage (EBL=1500 mL) secondary to lower uterine segment atony. Along with administration of uterotonic agents, uterine massage, and placement of a Bakri balloon, she received one unit of platelets, due to evidence of ongoing clinical coagulopathy in the setting of thrombocytopenia. Despite this transfusion, she remained clinically coagulopathic. Suspecting a qualitative platelet defect, a decision was made to administer DDAVP (0.3μg/kg) IV, which resulted in clinical improvement in her bleeding and coagulopathy. During the next 24 hours, no additional bleeding occurred, despite a platelet count nadir of 23,000/μL; no further blood products were transfused during the postpartum period. Her epidural catheter was removed 48 hours after delivery, when her platelet count increased to 81,000/μL. Serial neurological examinations were negative throughout the postpartum period.

Discussion: DDAVP administration increases plasma levels of factor VIII:C and von Willebrand factor, resulting in increased platelet adhesion.(3) Despite evidence of its use in acquired defects of platelet function in uremic and cardiac surgery patients, only one report in literature describes the successful use of DDAVP for normalization of a prolonged bleeding time in a preeclamptic parturient.(4) However, DDAVP has been safely administered in pregnancy for diabetes insipidus, albeit at lower doses.(5) In this case report, DDAVP administration likely resulted in a qualitative improvement in platelet function, thereby improving hemostasis. Thromboelastogram analysis would have been useful to confirm the presence of a qualitative platelet defect, and, if present, to determine the effectiveness of DDAVP administration. Further study of DDAVP use in preeclamptic patients should be performed before its routine use can be advocated.

References: