CORRESPONDENCE

The Differential Diagnosis of Thrombocytopenia in Pregnancy—An Interdisciplinary Challenge

by Dr. med. Frauke Bergmann and Prof. Dr. med. Werner Rath in issue 47/2015

Additional Investigations

The topic was presented very clearly, but I would still like to add some comments. On thrombocytopenia—such as gestational thrombocytopenia, for example—a thrombocyte function test should be undertaken, in order to rule out a possibly comorbid thrombopathy—especially in frequent epistaxis or hematoma. The test of choice would be either the Multiplate, Chrono-log, or VerifyNow test. In confirmed thrombocytopenia and increased peripartum hemorrhage, 1 ampoule of desmopressin per 10 kg body weight should be given intravenously (IV) as a brief infusion, followed by 1 g tranexamix acid IV. As an emergency measure in persistent hemorrhages, 1000 international units (IU) von Willebrand factor should be given IV, for example. Although measuring antiplatelet antibodies is not recommended as a routine examination, in idiopathic thrombocytopenia, it is important to try to detect antiplatelet antibodies of the IgG type and, if required, to determine their titers. These can enter into the fetal circulation and cause thrombocytopenia in the infant Furthermore, the human platelet antigen (HPA) status should be determined in women who take acetylsalicylic acid (ASS) (2). In mothers who are HPA-1a or HPA-5b negative, the partner's HPA status should be ascertained. If this is positive for one of the two characteristics, then HPA antibodies will need to be detected from the 16th week of gestation at monthly intervals (3). If such antibodies are confirmed, neonatal alloimmune thrombocytopenia may affect the newborn. For this reason, the peripartum and postpartum measures should be undertaken as in autoimmune thrombocytopenia (4). A further helpful differentiation between HELLP syndrome and thrombotic-thrombocytopenic purpura (TTP) can be achieved by using von Willebrand activity. Where activities > 150% of the normal maximum value occur without acute phase reaction with hyperfibrinogenemia, Factor VIII, CRP and D-Dimer increase, leukocytosis or thrombocytosis, then this would indicate TTP.

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Conflict of interest statement
The author declares that no conflict of interest exists.

In Reply:

As described in our article (1), pregnant women with a tendency to bleed will, without question, need to undergo further investigation. In asymptomatic pregnant women with a normal platelet count at the start of their pregnancy (=criteria of gestational thrombocytopenia are met), no indication exists for testing platelet function (*Table 1* in our article). Severe hereditary thrombocytopathy is obvious from an early age. Mild thrombocytopathy may become obvious in adulthood only; the patients do not show any tendency to bleed in everyday life ([39] in our article), during the course of pregnancy, and during delivery (not least because of different compensation mechanisms of hemostasis). Thrombocytic bleeding is not treatable by administering von Willebrand factor concentrate.

The VerifyNow testing system was developed and licensed only for the purpose of controlling the effectiveness of different platelet aggregation inhibitors. In patients with a tendency to bleed, von Willebrand- syndrome is much more likely than thrombocytopathy. For this reason, platelet function testing cannot be recommended in gestational thrombocytopenia (no symptoms of bleeding). The responsible physician can obviously decide whether to initiate an investigation for antiplatelet antibodies; the diaplacental transmission and the risk for the child were described in our article (page 797 in our article).

Our article focused on the differential diagnosis of thrombocytopenia. Pregnant women who develop the relevant HPA-antibodies have normal platelet counts (page 797). The phenomenon was mentioned briefly but was not our subject, and neither was the treatment (with side effects) of high-risk pregnancies (recurrent fetal losses, thrombophilia).

The disproportionate increase in VWF activity as a distinguishing feature between HELLP syndrome and thrombotic-thrombocytopenic purpura (TTP) has not been described in the literature and cannot be deduced from registry studies. Inquiries to reference laboratories (Hamburg, Bern) did not confirm this observation. The disproportionate increase in VWF activity can possibly be explained on the basis of the pathomechanism (a lack of von Willebrand factor-cleaving protease), but a clear distinction of the phenomena from one another would remain difficult.

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