short reports
Haematologica 1997; 82:341-342

GESTATIONAL THROMBOCYTOPENIA: A PROSPECTIVE STUDY

MARCO RUGGERI, CORRADO SCHIAVOTTO, GIANCARLO CASTAMAN, ALBERTO TOSETTO, FRANCESCO RODEGHIERO
Hemophilia and Thrombosis Center, Department of Hematology, San Bortolo Hospital, Vicenza, Italy

ABSTRACT

Gestational thrombocytopenia (GT) is commonly observed in pregnancies with otherwise limited obstetric and hematologic complications. However, few data are available on the natural history of the disease, and on the recurrence of thrombocytopenia in subsequent pregnancies. From June 1987 to December 1993, 37 consecutive patients with GT were enrolled in a prospective study, with a total of 41 pregnancies observed. Vaginal delivery was carried out in 33/41 (80%); two patients were transfused with packed red cells for obstetric hemorrhage (*post-partum* uterine atony). Neonatal bleeding did not occur. In all newborns platelet count was performed within 24 hours after delivery: 2 newborns had mild (80 and 75×10^9/L) and 1 severe thrombocytopenia (12×10^9/L) at birth; all of them recovered to a normal platelet count within 10 days without treatment. 28/37 patients were followed for 12 months after delivery; in 23 a normalization of platelet count occurred within 1-5 months from delivery; in 5 mild thrombocytopenia (100-120×10^9/L) persisted during follow-up. Four patients had a second pregnancy and recurrence of thrombocytopenia was observed in all of them. GT is rarely associated with bleeding episodes during pregnancy and partum, and recovers spontaneously within few months after delivery but thrombocytopenia can recur in subsequent pregnancies. Severe thrombocytopenia is not observed in newborns so that a conservative management is warranted.

Key words: gestational thrombocytopenia, autoimmune thrombocytopenia, pregnancy

Gestational thrombocytopenia (GT) is a recently described clinical entity[1] which is characterized by the incidental detection of a mild to moderate reduction of platelet count during pregnancy in otherwise healthy women with no previous history of autoimmune thrombocytopenia and no conditions known to be associated with thrombocytopenia. Several studies have demonstrated that GT is of limited significance for the mother and the baby.[1-5] However few data are available about the natural history of the disease and the recurrence of thrombocytopenia in subsequent pregnancies,[3,4,6] and there is only one prospective study including a follow -up longer than the immediately perinatal period.[3]

We present here the results of a prospective study of a group of 37 cases of GT, diagnosed at our Department during a period of six years.

Patients and Methods

Between June 1987 and December 1993, 37 patients with GT (mean gestational age at diagnosis 5 months, range 2-8 months) were enrolled into the study and evaluated prospectively. GT was defined as an asymptomatic, mild thrombocytopenia occurring during gestation (platelet count from 50 to 130×10^9/L, 30/37 cases with platelet count < 100×10^9/L), in patients with no past history of thrombocytopenia, a normal platelet count at the beginning of or immediately before the pregnancy and without clinical symptoms of preeclampsia or HELLP (*hemolysis, elevated liver function test, low platelet count*) syndrome. The presence of EDTA-dependent pseudothrombocytopenia was checked by performing platelet count also in samples anticoagulated with sodium heparin and trisodium citrate and by examination of a May-Grunwald stained peripheral smear. Furthermore, no flags for platelet clumps and for abnormal platelet distribution were shown up by automated blood cell analysis. A total of 41 pregnancies was studied and maternal and neonatal platelet count (performed on cord blood) at delivery was available.

Results

The clinical characteristics are reported in Table 1. A total of 37 patients were prospectively followed, (mean follow-up 5 months, range 2-7) for 41 pregnancies. 30 patients had a platelet count below 100×10^9/L, and in 6 of them a platelet count below 60×10^9/L (range 52-60×10^9/L) was observed. Vaginal delivery was carried out in 33/41 (80%); whereas 8/41 (20%) patients underwent caesarean section because of obstetric indications. Two patients were transfused with packed red cells for obstetric hemorrhage (*post-partum* uterine atony). Neonatal bleeding did not occur in any delivery. Two newborns had mild (80 and 75×10^9/L) and 1 severe thrombocytopenia (12×10^9/L) at birth: all of them returned to a normal platelet count within 10 days without treatment. Twenty-eight of 37 patients were followed for 12±3 months after delivery; in 23 progressive normalization of platelet count occurred within 1-6

Correspondence: Dr. Francesco Rodeghiero, Department of Hematology, San Bortolo Hospital, 36100 Vicenza, Italy. Tel. international +39.444.993679. Fax international +39.444.993922.
Received February 4, 1997; accepted April 15, 1997.

Table 1. Clinical characteristics in the patients (n=37).

age at diagnosis	median (range)	31 (22-40)	
age at delivery	median (range)	32 (23-40)	
platelets at diagnosis (x 10^9/L)	median (range)	104 (52-130)	p= 0.320*
platelets at delivery (x 10^9/L)	median (range)	94 (57-137)	p< 0.0005*
platelets post partum (x 10^9/L)	median (range)	162 (130-252)	

**Student t-test.*

months from delivery, whereas in 5 a mild thrombocytopenia (100-120×10^9/L) persisted.

Discussion

GT is a benign, clinical condition, commonly observed during normal pregnancy. In a recent report,[7] platelet count was measured in 6,715 women who delivered consecutively in a major clinical center, and 513 (7.6%) of them were found to have thrombocytopenia. Two thirds of these women had no history of autoimmune thrombocytopenia, and gave birth to infants with normal platelet count or mild thrombocytopenia without bleeding symptoms. Our study confirms that most cases of GT have an uncomplicated course, with no significant fetal and maternal morbidity, even in patients with platelets < 60×10^9/L. Neonatal bleeding symptoms were not observed, and only a case of severe, but transitory and asymptomatic thrombocytopenia, and two cases of mild transitory thrombocytopenia were recorded. In the case with severe thrombocytopenia, a complete normalization of maternal and platelet count was observed during the follow-up, and a diagnosis of neonatal alloimmunization can not be excluded. The incidence of thrombocytopenic neonates, in GT patients, is quite similar to that reported in non-thrombocytopenic mothers (3-4%).[6,8-9] In 75% of the patients, normalization of platelet count occurred within 4-8 weeks from delivery, but in 5 a mild, asymptomatic thrombocytopenia (100-120×10^9/L) persisted for more than 48 months. In these patients no symptoms or signs of autoimmune diseases, in particular anticardiolipin antibodies,[10] were found. All six patients with the lowest platelet counts (range 52-60×10^9/L) promptly recovered during *post-partum*. Four patients had two pregnancies, with recurrence of thrombocytopenia. Few data are available in literature on the follow-up after delivery and the recurrence of thrombocytopenia in subsequent pregnancies. In the only prospective study with a long follow-up,[3] 22 asymptomatic women with GT were monitored during pregnancy and for 11±8 months after delivery. Only one patient did not recover from thrombocytopenia during *post-partum* follow-up. Neonatal platelet count was normal in all cases and none of the newborns had bleeding symptoms. Thrombocytopenia recurred in all the three cases with a subsequent pregnancy. These data need to be confirmed by further studies.

In conclusion, we confirm that GT is a benign condition and it is not associated with maternal or neonatal morbidity and mortality. Significant neonatal thrombocytopenia is seldom observed, it can recur in subsequent pregnancies, but platelet count usually recovers within 1-6 months *post-partum* and, in our series, it was not an early manifestation of autoimmune diseases.

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