ELSEVIER

Blood 142 (2023) 1261–1263

The 65th ASH Annual Meeting Abstracts

POSTER ABSTRACTS

331.THROMBOTIC MICROANGIOPATHIES/THROMBOCYTOPENIAS AND COVID-19-RELATED THROMBOTIC/VASCULAR DISORDERS: CLINICAL AND EPIDEMIOLOGICAL

Pregnancy-Related Outcomes in Patients with Congenital Thrombotic Thrombocytopenic Purpura: Post Hoc Analysis of a Retrospective Chart Review Study

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Background: Congenital thrombotic thrombocytopenic purpura (cTTP) is an ultra-rare, life-threatening inherited deficiency of the von Willebrand factor-cleaving metalloprotease, ADAMTS13, leading to consumptive thrombocytopenia due to microvascular thrombosis. Symptoms typically present either in early infancy, in adulthood during pregnancy, or in association with systemic infections, periods and conditions in life that are associated with an increased risk of acute cTTP episodes. Prophylaxis with plasma or plasma-derived therapies to replenish ADAMTS13 are commonly used. Limited evidence is available about the clinical burden of cTTP among female patients during pregnancy.
Aims: A chart review was undertaken to gain insight into the natural history of cTTP, short- and long-term clinical outcomes, burden of disease, and treatment patterns. A post hoc analysis aimed to assess the clinical characteristics, treatment patterns and outcomes of patients with cTTP during pregnancy.
Methods: An international, multi-center, retrospective chart review collected data from January 01, 2009 to December 31, 2020. Patients with cTTP were included if they were diagnosed with cTTP, received therapeutic intervention for cTTP, or had a cTTP-related clinical event recorded between January 01, 2009 and December 31, 2017 (index identification period). Patients were followed from their study index date until loss to follow-up, enrollment in a clinical trial, death, or the end of the study period. Ethics approval and informed consent were obtained where applicable. Data presented are from a post hoc analysis which assessed clinical characteristics and outcomes during pregnancy in female patients who were >14 years of age at study index.
Results:A total of 78 patients with cTTP were identified during the index identification period and included in the analysis, 61 (78%) were female and the median (IQR) age at diagnosis was 26.5 (14.5-37.0) years. Overall, 92 acute episodes were reported by 55 of the 78 patients included in the analysis. Triggers for acute episodes were recorded in 46 of the 92 episodes, with infection (n=21/46) and pregnancy (n=17/46) being the most common. Prophylaxis was administered in 47/78 patients, with pregnancy (n=13/47) and clinical symptomatology (n=13/47) being the most common reasons to initiate prophylaxis. Information regarding pregnancy was collected from 55 female patients who were aged >14 years at study index. Of these 55 patients, 45 reported ≥1 pregnancy and 30 were diagnosed with cTTP during or immediately after pregnancy. One or more pregnancy-related complications were reported by 26/45 patients who were ever pregnant. The most common complication was fetal death or pregnancy loss which was reported in 16/45 patients (Table 1). Of the 55 female patients >14 years of age at study index, 41 had documented acute episodes during the study period, of whom 22 were pregnant at the time an episode occurred. Each of these 22 patients experienced 1 acute episode while pregnant during the study. Twenty-six pregnancy-related complications were reported during 18 of these 22 acute episodes (Table 2). The most frequently reported were fetal death or pregnancy loss (n=8), hemolysis, elevated liver enzymes and low platelet count (n=7; HELLP syndrome), and pre-eclampsia (n=6). A total of 54 treatments (plasma exchange [PEX], fresh frozen plasma [FFP], steroids, red blood cell transfusion, platelet transfusion, caesarean section, intravenous immunoglobulins, rituximab, and hemodialysis) were received by the 22 pregnant patients who experienced an acute episode while pregnant during the study period. Forty-four treatments were administered for acute episodes associated with pregnancy-related complications. Of the 54 treatments administered, PEX (n=15/54) and FFP (n=11/54) were the most common.

Conclusions: Data from this chart review show that a high proportion of pregnant patients with cTTP experience pregnancy-related complications which could result in poor fetal and maternal outcomes. Pregnancy is a common trigger for acute cTTP episodes and initiation of prophylaxis. Despite current therapeutic interventions, pregnancy-related complications represent a high clinical burden for cTTP patients. Novel therapies with demonstrated efficacy and safety profiles are needed to address the poor clinical outcomes experienced by pregnant patients with cTTP.

Disclosures Coppo: *Alexion:* Consultancy, Honoraria, Research Funding, Speakers Bureau; *Takeda:* Consultancy, Honoraria, Research Funding, Speakers Bureau; *Sanofi:* Consultancy, Honoraria, Research Funding, Speakers Bureau. **Scully:** *Octopharma:* Speakers Bureau; *Sanofi:* Honoraria, Speakers Bureau; *Takeda:* Honoraria, Research Funding, Speakers Bureau; *Alexion:* Research Funding. **Kremer Hovinga:** *Baxter/Takeda:* Membership on an entity's Board of Directors or advisory committees, Research Funding, Speakers Bureau; *Roche:* Other: Lecture Fees; *Ablynx/Sanofi:* Honoraria, Membership on an entity's Board of Directors or advisory committees, Speakers Bureau; *SOBI:* Other: Congress Travel Support. **Jose Aragon:** *HCD Economics:* Current Employment; *Takeda Development Center Americas, Inc:* Research Funding. **Patwari:** *Takeda Development Center Americas, Inc.:* Current Employment, Current holder of *stock options* in a privately-held company. **Wang:** *Takeda Development Center Americas, Inc.:* Current Employment, Current holder of *stock options* in a privately-held company. **Mellgard:** *Takeda Development Center Americas, Inc.:* Current Employment, Current holder of *stock options* in a privately-held company. **Ayodele:** *Takeda Development Center Americas, Inc.:* Current Employment, Current holder of *stock options* in a privately-held company. **Saad:** *Takeda Development Center Americas, Inc.:* Current Employment, Current holder of *stock options* in a privately-held company.

Table 1. Pregnancy-related complications reported in women with cTTP who were ever pregnant

Complication	Patients, n (%) N=45
Fetal death or pregnancy loss*	16 (35.6)
Pre-eclampsia	14 (31.1)
HELLP syndrome	11 (24.4)
Gestational thrombocytopenia	5 (11.1)
Hypertension	3 (6.7)
Other obstetric complications	3 (6.7)
Gestational diabetes	2 (4.4)
Hyperemesis gravidarum	1 (2.2)
Ectopic pregnancy	1 (2.2)

Patients could experience more than one complication

*Includes early miscarriage (occurring <12 weeks into the pregnancy), late miscarriage (occurring ≥12 weeks into the pregnancy), intrauterine fetal death, and still birth

HELLP, hemolysis, elevated liver enzymes and low platelet count

Table 2. Acute cTTP episodes with pregnancy-related complications during the study period

Complication	Acute Episodes, n (%) N=18
Fetal death or pregnancy loss*	8 (44.4)
HELLP syndrome	7 (38.9)
Pre-eclampsia	6 (33.3)
Intrauterine growth restriction	4 (22.2)
Missing[†]	1 (5.6)

Patients could experience more than one complication per acute cTTP episode

*Includes early miscarriage (occurring <12 weeks into the pregnancy), late miscarriage (occurring ≥12 weeks into the pregnancy), intrauterine fetal death, and still birth

[†]One patient reported complications but no further details were provided

HELLP, hemolysis, elevated liver enzymes and low platelet count

Figure 1

https://doi.org/10.1182/blood-2023-189181