Abstracts 1-8

1 Tranexamic acid for the prevention of postpartum hemorrhage after cesarean delivery: the TRAAP2 trial

Loïc Sentilhes[1], Marie-Victoire senat[2], Maëla Le Lous[3], Norbert Winer[4], Patrick Rozenberg[5], Gilles Kayem[6], Eric Verspyck[7], Florent Fuchs[8], Elie AZRIA[9], Denis Gallot[10], Diane Korb[11], Raoul Desbriere[12], Camille Le Ray[13], Céline Chauleur[14], Fanny De Marcillac[15], Franck Perrotin[16], Olivier Parant[17], Laurent Salomon[18], Emilie Gauchotte[19], Florence Bretelle[20], Antoine Benard[1], Aurore Georget[1], Astrid Darsonval[21], Catherine Deneux-Tharaux[22]

[1]Bordeaux University Hospital, Bordeaux, France, [2]Kremlin Bicètre, Ile-de-France, France, [3]Rennes University Hospital, Rennes University Hospital, France, [4]Nantes University Hospital, Pays de la Loire, France, [5]Poissy Saint Germain Hospital, Poissy Saint Germain Hospital, France, [6]Armand-Trousseau Hospital, Paris, France, [7]Rouen Univesity Hospital, Haute-Normandie, France, [8]Montpellier University Hospital, Languedoc-Roussillon, France, [9]INSERM UMR 1153, Obstetrical, Perinatal and Pediatric Epidemiology Research Team (Epopé), Centre for Epidemiology and Statistics Sorbonne Paris Cité, Paris Descartes University, Paris, France, [10]Clermond-Ferrand University Hospital, Centre, France, [11]Robert Debré University Hospital, Paris, [12]St Joseph Hospital Marseille, Provence-Alpes-Cote d'Azur, France, [13]Port Royal Maternity Hospital, Ile-de-France, France, [14]Saint Etienne University Hospital, Rhone-Alpes, France, [15]Strasbourg University Hospital, Alsace, France, [16]Tours University Hospital, Centre, France, [17]Toulouse University Hospital, Languedoc-Roussillon, France, [18]Necker University Hospital, Necker University Hospital, France, [19]Nancy University Hospital, Lorraine, France, [20]Marseille University Hospital, Provence-Alpes-Cote d'Azur, France, [21]Angers University Hospital, Angers, France, [22]INSERM U1153, INSERM U1153, France

OBJECTIVE: To test the impact of 1g of tranexamic acid after cesarean delivery on the incidence of postpartum hemorrhage (PPH).

STUDY DESIGN: In a multicenter, double-blind, randomized controlled trial, we randomly assigned women with a cesarean before or during labor at ≥ 34 gestation weeks to receive a prophylactic uterotonic and 1 g of tranexamic acid (TXA) or placebo. The primary outcome was an objective calculated blood loss > 1000 ml or a red blood cell transfusion by Day 2 after delivery. Secondary outcomes were other measures of postpartum blood loss and potential adverse effects of TXA up to 3 months after delivery.

RESULTS: Of the 4551 randomized women, 4431 had cesareans, 4153 of whom (93.7%) were assessed for primary outcome. The primary outcome occurred in 556 of 2086 women (26.7%) in the TXA and in 653 of 2067 (31.6%) in the placebo group (adjusted risk ratio, 0.84; 95% confidence interval [CI], 0.75 to 0.94; P<0.01). Mean rates for blood loss-related laboratory outcomes were lower in the TXA than the placebo group: mean calculated blood loss (680±748 versus 787±750 ml) and mean peripartum change in hemoglobin and hematocrit (all adjusted P-values <0.001). There were no significant between-group differences in the rates of these hemorrhage-related outcomes: mean gravimetrically estimated blood loss, provider-assessed clinically significant PPH, use of additional uterotonic agents, and postpartum transfusion (all adjusted P>0.05). Vomiting or nausea was more frequent in the TXA than the placebo group (42.7% versus 35.9%, adjusted P<0.001). At 3 months postpartum, thromboembolic events had occurred in 0.4% (8/2079) of the TXA and 0.1% (2/2086) of the placebo group (adjusted risk ratio, 3.99; 95% CI, 0.85 to 18.81; adjusted P=0.08).

CONCLUSION: Among women with cesarean receiving prophylactic uterotonics, tranexamic acid treatment resulted in a significantly lower rate than placebo of calculated blood loss > 1000 ml or transfusion by day 2, but did not reduce hemorrhage-related secondary clinical outcomes (ClinicalTrials.gov numberNCT03431805).

2 Pessary plus progesterone to prevent preterm birth in women with a short cervix (P5 trial)

Rodolfo C. Pacagnella[1], Thaís Silva[2], José Guilherme Cecatti[2], Renato Passini-Jr[3], Tatiana Fanton[3], Anderson Borovac-Pinheiro[3], Cynara Pereira[3], Marcelo S. França[4], Wentao Li[5], Ben Mol[5]

[1]UNICAMP, Sao Paulo, [2]UNICAMP, Sao Paulo, Brazil, [3]Unicamp, Sao Paulo, Brazil, [4]Federal University of Sao Paulo, Sao Paulo, Brazil, [5]Monash University, Melbourne, Australia

OBJECTIVE: While there it is known that progestogens reduce spontaneous preterm birth in women with a mid-trimester short cervix, studies on cervical pessary show conflicting results. We compared the additional effectiveness of cervical pessary for the prevention of preterm birth in women with a mid-trimester short cervix already using progesterone.

STUDY DESIGN: We performed a multicenter randomized controlled trial in 18 perinatal centers in Brazil (RBR-3t8prz UTN:U1111-1164-2636). Asymptomatic women with a singleton or twin pregnancy and a CL ≤ 30mm, measured at 16+0 − 22+6 weeks gestation, were randomized to cervical pessary + vaginal progesterone or vaginal progesterone (200mg daily) alone. Treatments were used from randomization to 36 weeks of gestation or delivery. The primary outcome was a composite of neonatal mortality and morbidity. Secondary outcomes were among others delivery <37 weeks and delivery <34 weeks. We planned subgroup analysis according to cervical length (≤ 25 mm), parity and the number of fetuses (singletons or twins).

RESULTS: Between July 15, 2015 and March 29, 2019, we measured cervical length in 8,490 women, of which 475 women were randomized to receive pessary + progesterone and 461 women to progesterone alone. The primary composite perinatal outcome occurred in 89/463 19.2% versus (91/436) 20.9%, respectively (RR 0·85, 95% CI 0·55 to 1·1). Delivery rates < 37 weeks were 29·1% versus 31·4% (RR 0·86 CI 0·72 - 1·04) while < 34 weeks, delivery rates were 9·9% versus 13·9% (RR 0·66 CI 0·47-0·93). In women with a nulliparous singleton pregnancy and cervical length ≤ 25 mm, the composite perinatal outcomes occurred in 20% versus 33% of the women (RR 0.59, 95% CI 0.37 − 0.94, p-value 0.02).

CONCLUSION: In asymptomatic women with a short cervix, the combination of cervical pessary + vaginal progesterone did not statistically significantly improve perinatal outcome over vaginal progesterone alone. However, delivery <34 weeks occurred significantly less, specifically in nulliparous women with a CL <25 mm

Table 1 – Primary and secondary outcomes for the randomized trial

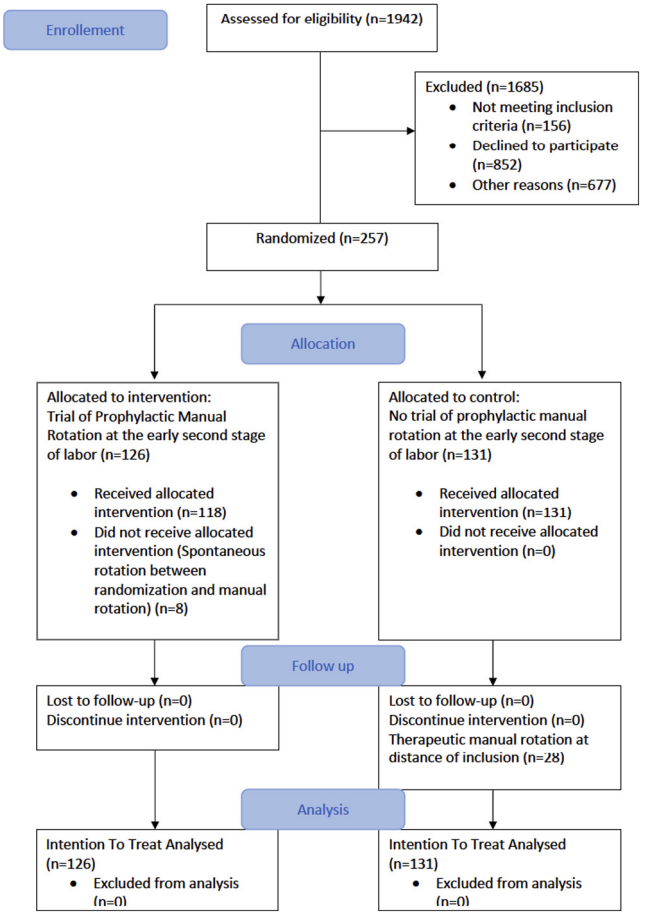
Composite Neonatal Outcomes						
	Progesterone + Pessary		Progesterone		Adjusted RR (95% CI)	Adjusted p-value
	n/N	%	n/N	%		
Mother level	89/463	19.2	91/436	20.9	0.88 (0.69-1.12)	0.306
Neonatal level	98/503	19.4	100/461	21.7	0.85 (0.66-1.10)	0.218
Secondary outcomes						
Delivery components	Progesterone + Pessary		Progesterone		Adjusted RR (95% CI)	Adjusted p-value
	n/N	%	n/N	%		
Overall < 37 weeks	138/474	29.1	144/458	31.4	0.86 (0.72 - 1.04)	0.114
Overall < 34 weeks	47/474	9.9	64/458	13.9	0.66 (0.47 - 0.93)	**0.016**
Spont. < 37 weeks	74/474	15.6	84/458	18.3	0.78 (0.60 - 1.03)	0.077
Spont. < 34 weeks	29/474	6.1	41/458	9.0	0.63 (0.40 - 0.98)	**0.040**
High- effect subgroup: nulliparous, cervix length <25mm, singleton						
Delivery components	Progesterone + Pessary		Progesterone		Adjusted RR (95% CI)	Adjusted p-value
Primary outcome	20/127	15.8	33/120	27.5	0.59 (0.37 - 0.94)	**0.025**
Overall < 37 weeks	27/128	21.1	43/127	33.9	0.65 (0.44 - 0.97)	**0.034**
Overall < 34 weeks	9/128	7.0	26/127	20.5	0.35 (0.17 - 0.70)	**0.003**

3 Prophylactic Manual Rotation of Persistent Occiput Posterior to decrease operative Delivery: a Multicentric Randomized Trial

Julie Blanc[1], Pierre Castel[2], Franck Mauviel[3], Karine Baumstarck[2], Florence Bretelle[4], Jean-Baptiste Haumonté[5], Claude D'Ercole[2]
[1]Department of Gynecology and Obstetrics, AP-HM Assistance Publique-Hôpitaux de Marseille, Health Service Research and Quality of Life Center, Aix-Marseille University, Marseille, France, [2]Assistance Publique Hôpitaux de Marseille, Marseille, France, [3]CH Sainte Musse Toulon, Toulon, France, [4]Marseille University Hospital, Provence-Alpes-Cote d'Azur, France, [5]Hôpital Saint Joseph, Marseille, France

OBJECTIVE: Persistent occiput posterior (POP) positions are the commonest malpresentations of the fetal head during labor and are associated with prolonged second stage of labor, cesarean, instrumental deliveries, obstetrical anal sphincter injuries, postpartum hemorrhage and chorioamnionitis. Manual rotation is one of several strategies described to deal with POP. The literature suggests that manual rotation of POP could decrease operative deliveries but no randomized study has confirmed these findings. The aim of this study was to determine if the trial of prophylactic manual rotation during the early second stage of labor is associated with a decrease risk of operative deliveries (instrumental and/or cesarean deliveries).
STUDY DESIGN: This study was a prospective, randomized, controlled trial conducted in four French hospitals. Women with singleton term pregnancy and POP position confirmed by ultrasound at early second stage of labor and with epidural analgesia were eligible and randomized (1:1) to either receive the trial of prophylactic manual rotation of POP position (intervention group) or no trial of prophylactic manual rotation (standard group). The primary outcome was operative deliveries (instrumental and/or cesarean deliveries).
RESULTS: From December 2015 to December 2019, 257 women were randomized: 126 assigned to the intervention group and 131 to the standard group. The groups did not differ in baseline characteristics. Operative delivery was significantly less frequent in the intervention (I) group compared to the standard (S) group (29.4 vs. 41.2%, p=.047, Differentiel (I-S) [95% confidence interval, CI] = -11.8 [-15.7;-7.9]; relative risk [95% CI] = 0.71 [0.51-1.00]). Women in the intervention group were more likely to have a significant shorter second stage of labor and have a neonate with a significant higher Apgar score at 5 minutes. The were no differences in other secondary outcomes.
CONCLUSION: Trial of prophylactic manual rotation of persistent POP positions during the early second stage of labor is associated with a decrease risk of operative delivery.

Figure. Randomization and follow-up of study participants



4 Placental Hofbauer Cells As a Proxy Cell Type for Fetal Brain Microglia

Rose De Guzman[1], Rebecca Batorsky[2], Sezen Kislal[3], Sara Brigida[3], Staci Bilbo[3], Donna K. Slonim[2], Andrea G. Edlow[4]
[1]Massachusetts General Hospital, Newton, MA, [2]Tufts University, Boston, MA, [3]Massachusetts General Hospital, Boston, MA, [4]Massachusetts General Hospital, Department of Obstetrics and Gynecology, Boston, MA

OBJECTIVE: Both placental and brain immune activation have been reported in maternal obesity-exposed (MATOB) offspring, and MATOB offspring have an increased risk for autism spectrum disorder, ADHD, and cognitive deficits. Microglia, the resident brain immune cells, have been implicated in these morbidities. Hofbauer cells (HBCs), resident fetal placental macrophages, and microglia, resident brain macrophages, share a common embryonic origin in the fetal yolk sac in mice and humans. Because direct evaluation of microglial function in a living human fetus or neonate is impossible, we sought to determine whether HBCs could serve as a more