



ASSOCIATION OF PERINATAL OUTCOMES WITH PRESENCE THE OF PLACENTAL MASSIVE PERIVILLOUS FIBRIN DEPOSITION IN A TERTIARY HOSPITAL IN MEXICO

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Objective: To evaluate perinatal outcomes of placental massive perivillous fibrin deposition (PMPFD) in a tertiary hospital in Mexico.

Methods: 255 cases of placental specimens were studied between the weeks of gestation 16.0-41.6 in a tertiary hospital, ("National Institute of Perinatology", Mexico City), between January 2017 and October 2019. The data was collected through electronic clinical records. The exclusion criteria were multiple pregnancies, births <20 weeks, and patients with incomplete data in the file. Finally, the study included 198 placentas diagnosed with PMPFD. A control was included for each case with a placental histopathology report with the criteria "without histological alterations".

The gold standard for diagnosing PMPFD was based on the following criteria: fibrin deposits greater than 50% of the total chorionic villi and the intervillous space, according to the criteria of the Amsterdam Placental Workshop Consensus.

Qualitative data were compared between the groups with PMPFD and control placentas using the Chi-2 test or Fisher's exact test when the number of individuals is low. All tests were two-tailed and the significance level is set at $p < 0.05$. Statistical analyses were performed using IBM SPSS Version 22.0 software (SPSS, Inc., Chicago, IL).

Figure 1. Bar graph showing the trend to lower gestational ages in the group of PMPFD.

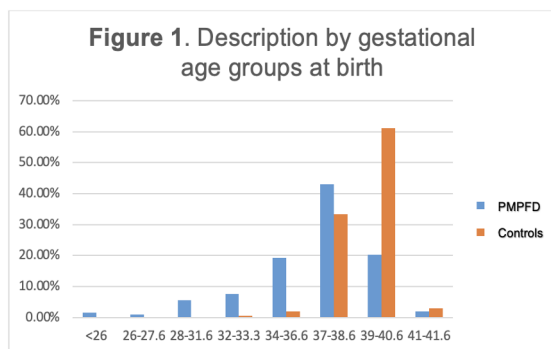
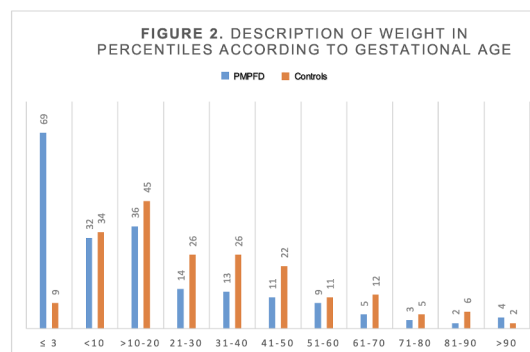


Figure 2. Bar graph comparing the weight percentile according to gestational age, observing a greater number of patients below the 3rd percentile.



Results: The incidence of PMPFD was 4.86% (255/5244) of the total of placentas analyzed, and 2.82% of all births. 90.90% shared some other placental lesion, mostly related to maternal malperfusion. 74.24% had maternal overweight and obesity. A higher rate was reported in cases of c-section 69.2% (OR 1.9; IC [1.26-2.88]), preterm birth (17.6% vs. 2.5%, OR 8.28; IC [3.17-21.64]), IUGR (27.2% vs. 2.5%, OR 14.47; IC [5.64-37.10]), and preeclampsia (34.9% vs. 4.04%, $p < 0.05$), with a tendency to develop early presentation and severe forms. The distribution of the <3rd percentile group is higher in the PMPFD (34.85% vs. 4.55%, $p < 0.05$). Neonatal complications were more frequent in the PMPFD group: neonatal death, respiratory distress syndrome, sepsis, necrotizing enterocolitis, mechanical ventilation, and intraventricular hemorrhage; only neonatal pneumonia had no statistical significance. Significant recurrence was only reported in IUGR (OR 1.04; CI [1.01-1.07]).

Table 1. Obstetric outcomes.				
	PMPFD n=198	Controls n=198		P
Mode of birth				
Vaginal delivery	53 (26.77%)	82 (41.41%)		0.002
C-section	137 (69.19%)	107 (54.04%)		NS
Forceps	8 (4.04%)	9 (4.55%)		NS
Gestational age at resolution (SD)				
	36.76 weeks (3.24)	39.25 weeks (1.24)		0.000
Preterm birth	69 (34.85%)	5 (2.53%)		0.003
Term birth	129 (65.15%)	193 (97.47%)		0.007
Fetal group classified according to estimated fetal weight				
Normal	124 (62.63%)	163 (82.83%)		0.000
IUGR	54 (27.27%)	5 (2.53%)		0.006
SGA	12 (6.06%)	10 (5.05%)		NS
LGA	8 (4.04%)	18 (9.09%)		NS

LGA: Large for gestational age, SGA: Small for gestational age, IUGR: Intrauterine growth restriction, NS: Not significant

Table 2. Perinatal outcomes				
	PMPFD n=198	Control group n=198		P
Preeclampsia				
Mean gestational age	68 (34.34%)	8 (4.04%)		0.000
Early <34 weeks	15 (22.06%)	0 (0%)		0.000
Late >34 weeks	53 (77.94%)	8 (100%)		
Intrauterine growth restriction				
Total	54 (27.27%)	5 (2.53%)		0.000
Neonatal complications				
Respiratory distress syndrome	22 (11.11%)	10 (5.05%)		0.02
Sepsis	14 (7.07%)	1 (0.53%)		0.001
Pneumonia	1 (0.51%)	0 (0%)		NS
Necrotizing enterocolitis	4 (2.02%)	0 (0%)		0.04
Mechanic ventilation	8 (4.04%)	0 (0%)		0.004
Intraventricular hemorrhage	8 (4.04%)	1 (0.53%)		0.01

NS: Not significant

Table 3. Percentile of newborn weights adjusted for gestational age				
	PMPFD n=198	Control group n=198		P
Percentile (SD)				
	18.86 (23.10)	29.88 (22.93)		0.000
Groups by percentiles				
≤ 3	69 (34.85%)	9 (4.55%)		0.000
10-90	125 (62.13%)	187 (94.44%)		NS
>90	4 (2.02%)	2 (1.01%)		NS

NS: Not significant

Conclusion: PMPFD is associated with a higher incidence of hypertensive states, IUGR, neonatal death and complications, preterm delivery, cesarean section rates, and lower percentiles according to gestational age. IUGR recurrence was evidenced, as in the existing literature.