

- [32] Di Mascio D, Sen C, Saccone G, Galindo A, Grünebaum A, Yoshimatsu J, et al. Risk factors associated with adverse fetal outcomes in pregnancies affected by Coronavirus disease 2019 (COVID-19): a secondary analysis of the WAPM study on COVID-19. *J Perinat Med*. 2020;48(9):950-958. doi: 10.1515/jpm-2020-0355.
- [33] Mazzitelli M, Micieli M, Votino C, Visconti F, Quaresima P, Strazzulla A, et al. Knowledge of Human Cytomegalovirus Infection and Prevention in Pregnant Women: A Baseline, Operational Survey. *Infect Dis Obstet Gynecol*. 2017;2017:5495927. doi: 10.1155/2017/5495927.
- [34] Del Piccolo L, Donisi V, Raffaelli R, Garzon S, Perlini C, Rimondini M, et al. The Psychological Impact of COVID-19 on Healthcare Providers in Obstetrics: A Cross-Sectional Survey Study. *Front Psychol*. 2021;12:632999. doi: 10.3389/fpsyg.2021.632999.
- [35] Perlini C, Garzon S, Franchi M, Donisi V, Rimondini M, Bosco M, et al. "Risk perception and affective state on work exhaustion in obstetrics during the COVID-19 pandemic" *Open Medicine*, 2022;17 (1):1599-1611. doi:10.1515/med-2022-0571
- [36] Franchi M, Del Piccolo L, Bosco M, Tosadori C, Casarin J, Laganà AS, Garzon S. COVID-19 and mental health in the obstetric population: a lesson from a case of puerperal psychosis. *Minerva Ginecol*. 2020 ;72(5):355-357. doi: 10.23736/S0026-4784.20.04606-7.
- [37] Nguyen K, Mukona LT, Nalbandyan L, Yar N, St Fleur G, Mukona L, et al. Peripartum Complications as Risk Factors for Postpartum Psychosis: A Systemic Review. *Cureus*. 2022;14(9):e29224. doi: 10.7759/cureus.29224.
- [38] Lebar V, Laganà AS, Chiantera V, Kunič T, Lukanović D. The Effect of COVID-19 on the Menstrual Cycle: A Systematic Review. *J Clin Med*. 2022;11(13):3800. doi: 10.3390/jcm11133800.
- [39] Diamanti M, Facchinetti F. Magnesium supplementation in obstetrics and gynaecology: A brief review. *Ital J Gynaecol Obstet*. 2020;32 (4):269-275. doi: 10.36129/jog.32.04.06
- [40] Machado K, Ayuk P. Post-COVID-19 condition and pregnancy. *Case Rep Womens Health*. 2022:e00458. doi: 10.1016/j.crwh.2022.e00458.

[41] Laganà AS, Veronesi G, Ghezzi F, Ferrario MM, Cromi A, Bizzarri M, et al. Evaluation of menstrual irregularities after COVID-19 vaccination: Results of the MECOVAC survey. Open Medicine. 2022;17(1):475-84. doi :10.1515/med-2022-0452

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Table 1: Demographic parameters.

	Booster group N=41	Non-Booster group N= 18	P value
Age (year)	31.49 ± 4.5	34.1 ± 5.6	0.059
Age >35 (N, %)	6 (14.6%)	5 (27.7%)	0.201
BMI (kg/m ²)	28.6 ± 3	30.2 ± 4	0.075
BMI > 30 kg/m ²	11 (26.8%)	9 (50%)	0.077
Parity : Primiparous/ Multiparous	9/32	3/15	0.466
With Comorbidities (N, %)	4 (9.7%)	5 (27.7%)	0.087
Hypertensive disorders	1	0	0.147
Diabetes	2	2	
Respiratory disease	1	3	
Term of pregnancy (weeks of gestation)	36.8 ± 2.7	35.1 ± 3.6	0.061

Table 2: Maternal data at hospital admission:

	Booster group N=41	Non-Booster group N= 18	P value OR [95% CI]
Asymptomatic (%)	24 (58.5%)	3 (16.6%)	0.003 OR= 5.5 [1.5- 19.8]
cough	15 (36.5%)	10 (55.5%)	0.142
fever	12 (29.2%)	12 (66.6%)	0.008 OR= 0.2 [0.06- 0.67]
headache or asthenia	6 (14.6%)	4 (22.2%)	0.357
Dyspnea	0	1 (5.5%)	0.305
Digestive signs (nausea, vomiting, diarrhea,..)	1 (2.4%)	1 (5.5%)	0.521
Others: (Sore throat or rhinorrhoea, anosmia and ageusia)	1 (2.4%)	0	0.695
Pre-eclampsia	5 (12.2%)	3 (16.6%)	0.464
Anemia <10g/dL	3 (7.3%)	1 (5.5%)	0.644
Cytolysis (>3×)	2 (4.8%)	1 (5.5%)	0.672
Thrombopenia <50000	0	0	-
Radiological signs > 20% (yes/no)	0	1 (5.5%)	0.305
Need for O2 at hospital admission	0	1 (5.5%)	0.305
O2 needed < 6L/min	0	0	-
O2 needed 6-15L/min	0	1	
O2 needed > 15 L/min	0	0	

Table 3: Maternal outcomes after delivery.

	Booster group N=41	Non Booster group N= 18	P value OR [95% CI]
Mode of delivery			
Cesarean delivery	17 (41.4%)	13 (72.2%)	0.028
Vaginal delivery	24 (58.6%)	5 (27.7%)	OR= 0.272 [0.082-0.908]
Indications for cesarean delivery			
Fetal distress	3 (17.6%)	3 (23%)	0.232
Obstetrical indications	14 (82.3%)	9 (69%)	0.074
Severe preeclampsia	0	1 (7.7%)	0.305
Maternal life-saving	0	0	-
Maternal outcomes after delivery			
Clinical deterioration after delivery (%)	1 (2.4%)	6 (33.3%)	0.02 OR= 0.05 [0.005-0.45]
Increased need for O2 after delivery	1 (2.4%)	6 (33.3%)	0.02 OR= 0.05 [0.005-0.45]
O2 needed < 6L/min	1	5	0.038
O2 needed 6-15L/min	0	0	-
O2 needed > 15 L/min or optiflow	0	1	0.305
Postpartum referral to ICU	0	1	0.305
Complications (yes/no)	0	5	0.002
ARDS	0	0	-
Postpartum hemorrhage	0	2	
Thromboembolic events	0	1	0.305
Septic shock	0	1	0.305
Pregnancy related complication	0	1	0.305
Need for advanced resuscitation	0	1	0.305
Length of hospital stay (days)	1.98 ± 0.93	4.67 ± 4	0.001
Length of hospitalization ≤ 5 days	40 (97.5%)	12 (66.6%)	0.0001 OR=20 [2.1 - 189]
Maternal death	0	1 (7.7%)	0.305

Table 4 : Perinatal outcomes :

	Booster group N=41	Non-Booster group N= 18	p value OR [95% CI]
Extreme prematurity : Delivery < 28 WG	0	1 (5.5%)	0.305
Severe prematurity (28 to 32 WG)	4 (9.7%)	7 (38.8%)	0.04 OR=0.278 [0.07-1.07]
Moderate to late prematurity (32 to 37 WG)	1 (2.4%)	1 (5.5%)	0.586
Prematurity (\leq 37 WG)	5 (12.1%)	11 (61.1%)	0.011 OR=0.19 [0.06-0.91]
Vertical transmission	0	0	-
breastfeeding	34 (82.9%)	11 (61.1%)	0.072 OR=3.0 [0.88- 10.7]
Admission in neonatal ICU	0	4 (22.2%)	0.007
Neonatal deaths and stillbirth	0	0	-