

## PURPOSE & OBJECTIVES

To compare pregnancy, obstetrical outcomes, and number of visits between patient undergoing frozen embryo transfer in artificial cycle (AC) vs modified natural cycle (m-NC).

## MATERIAL & METHODS

1207 frozen embryo transfer cycles performed in 2022 were retrospectively studied. Patients older than 40, with recurrent implantation failure, and recurrent pregnancy loss were excluded. Patients were divided according to their age, BMI, AMH, and type of embryo transfer protocol. Compared outcomes were endometrial thickness, pregnancy outcomes, miscarriage rate, number of clinic visits prior to transfer, and obstetrical outcomes.

Patients in the modified natural cycle (m-NC) group were followed by ultrasound. When the endometrium reached a thickness  $\geq 7$ mm, and a dominant follicle size  $\geq 15$ mm, HCG trigger was scheduled. Embryo transfer (blastocyst) occurred 7 days later. In the artificial cycle group (AC), patients received estrogen supplementation. When the endometrium reached a thickness  $\geq 7$  mm, embryo transfer was scheduled following 5 days of IM progesterone administration.

## RESULTS

649 patients were included in the study. Patients in the AC group had significantly better pregnancy rate (75.10% vs 67.7%  $p=0,040$ ). The modified natural cycle was significantly better for clinical pregnancy rate (64,2% vs 58,6%  $p= 0,0001$ ), and live birth rate (57.31% vs 45.24%  $p=0,003$ ). The miscarriage rate was almost four times as high in the AC group (OR:3.96; CI 2.22- 6.421,  $p=0.0001$ ). There was no difference in the mean endometrial thickness between the groups (9.31 in m-NC vs 9.57 in AC,  $p=0.053$ ). The number of visits was higher in the m-NC group, but the difference was not clinically significant (1,55 days vs 1,24 days  $p=0,053$ ). When comparing the obstetrical outcomes, patients with a m-NC transfer had a lower risk of hypertension (6,4% vs 11,9 %  $p= 0,176$ ), and higher risk of gestational diabetes (16,3% vs 8,3%  $p=0,038$ ); the results were non-significant.

Regression analysis was performed, and it was found that PGTA and the method of endometrial preparation were the sole predictors of achieving a LBR with  $p =0.04$  and  $0.001$  respectively.

## RESULTS

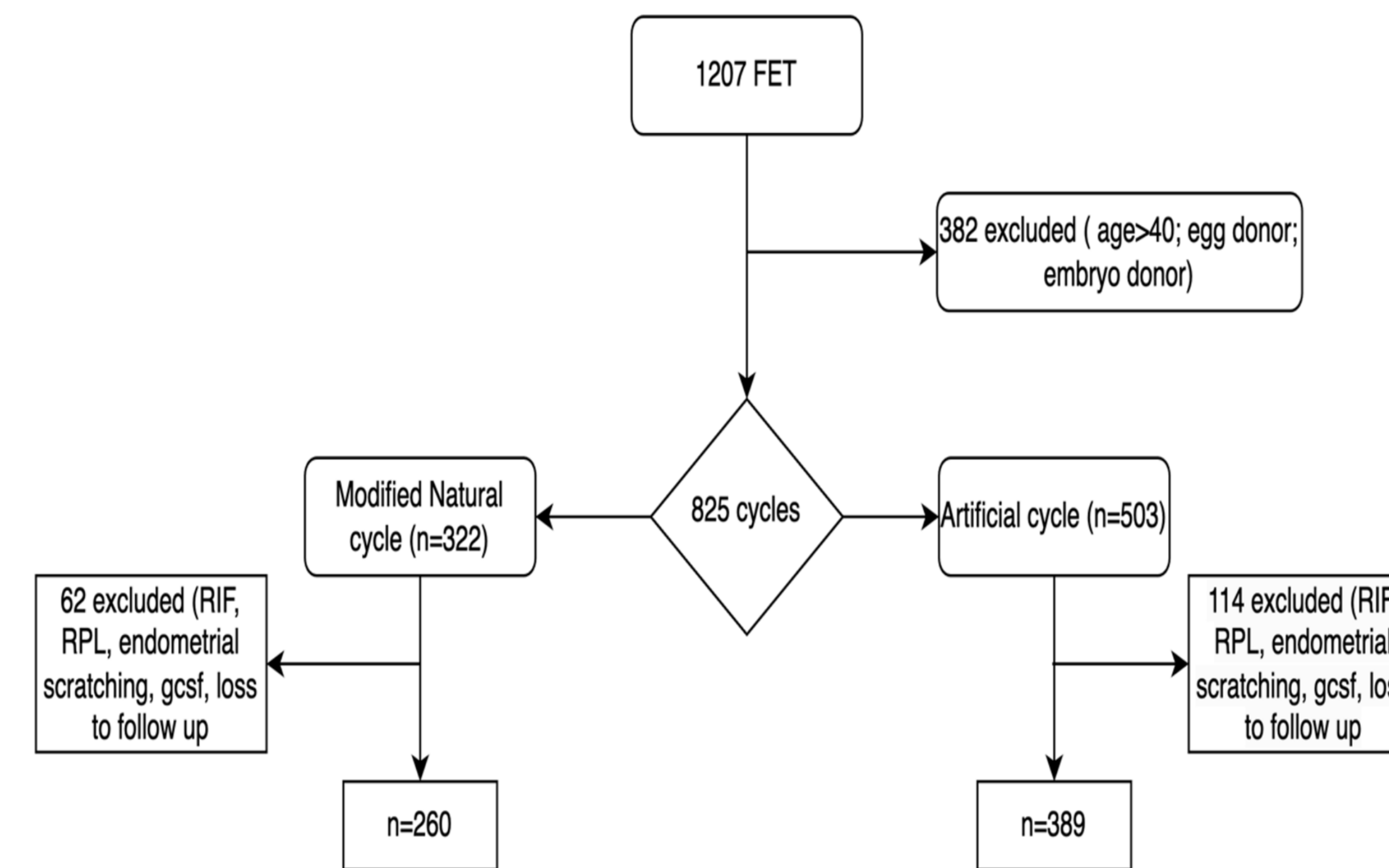


Figure 1. Study flowchart

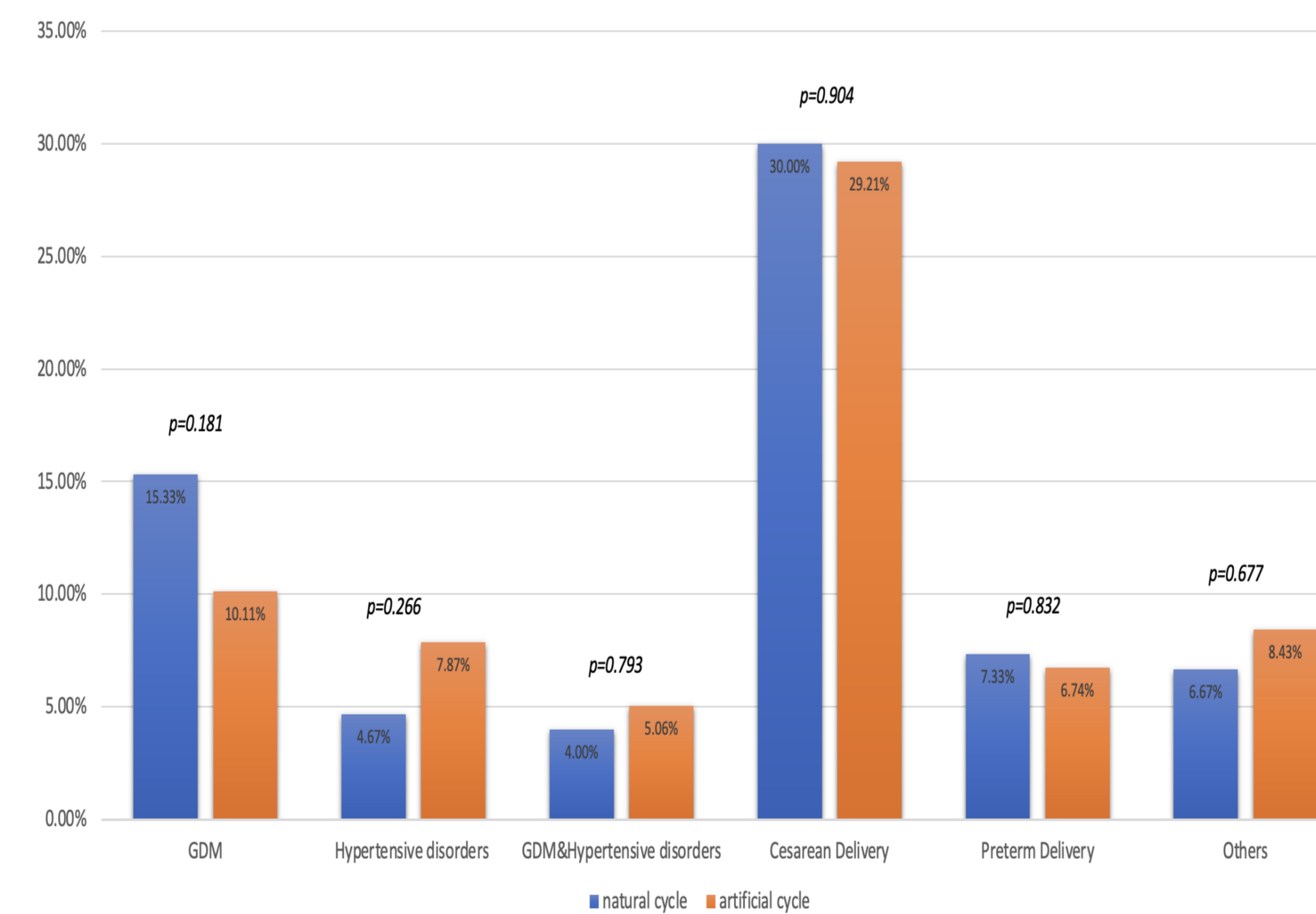


Figure 2. Diagram comparing the pregnancy complications in artificial vs modified natural cycles

Characteristics	m-NC (n=260)	AC (n=389)	P-value
Age (y), mean $\pm$ SD	34.05 $\pm$ 3.35	33.77 $\pm$ 3.41	0.311
24-29	19 (17.3)	54 (13.9)	
30-35	147 (56.5)	198 (50.9)	
36-39	94 (36.2)	137 (35.2)	
Body-Mass index (%)	25.08 $\pm$ 5.33	25.97 $\pm$ 5.75	0.056
AMH (ng/ml)	3.35 $\pm$ 2.13	4.62 $\pm$ 4.92	0.000
AFC (follicle)	22.61 $\pm$ 11.91	26.90 $\pm$ 17.87	0.001
Endometrial thickness (mm)	9.31 $\pm$ 1.66	9.57 $\pm$ 1.73	0.053
Age of Embryo at transfer n(%)			5.531
Day 5	233 (89.6)	341 (87.7)	
Day 6	27 (10.4)	48 (12.3)	
PGT-A n(%)			0.06
Yes	63 (24.2)	70 (18)	
No	197 (75.8)	319 (82)	
Number of visits	1.55 $\pm$ 0.79	1.24 $\pm$ 0.54	0.053

Table 1: Baseline characteristics

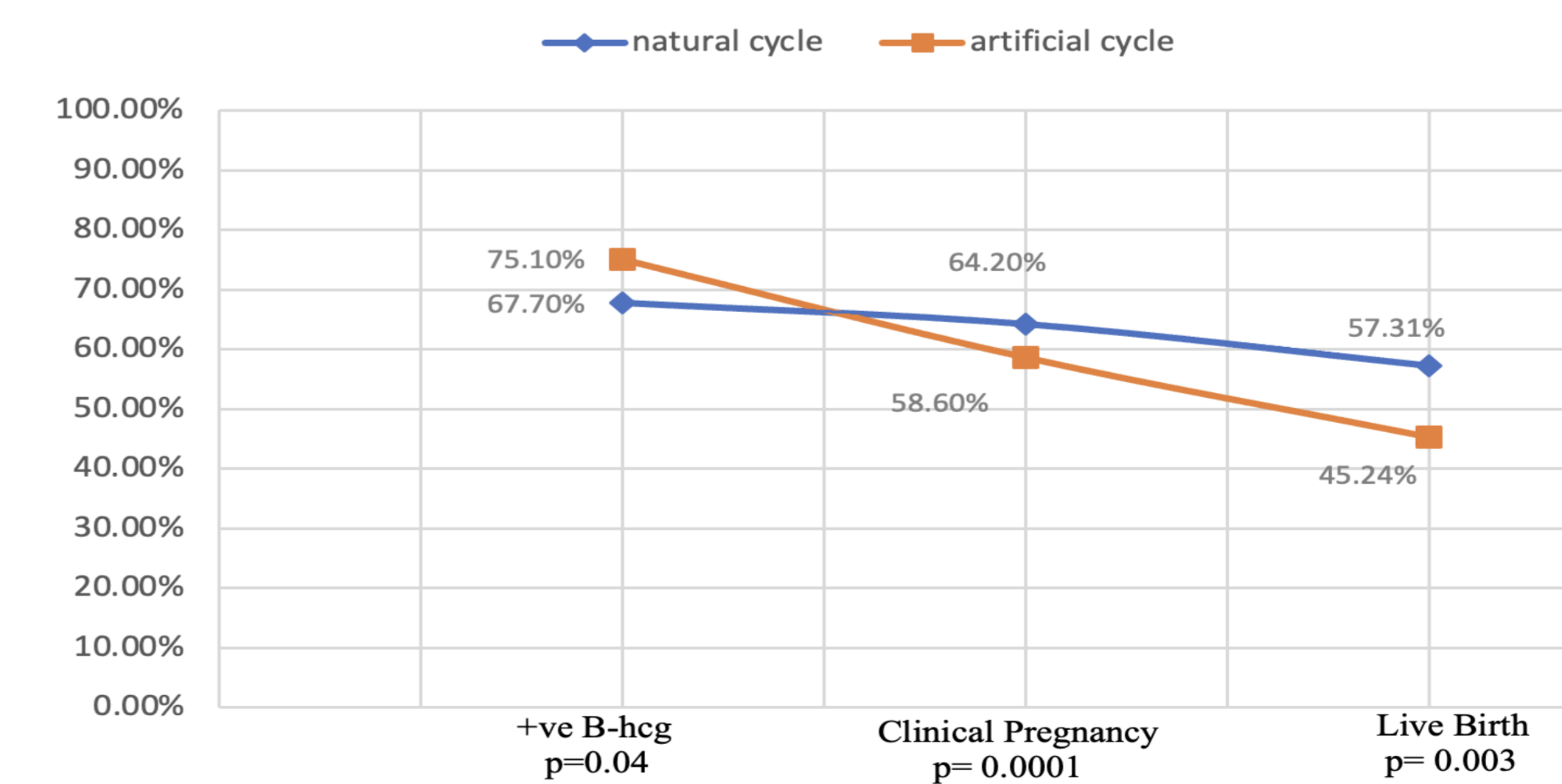


Figure 3. Graph representing the pregnancy outcomes

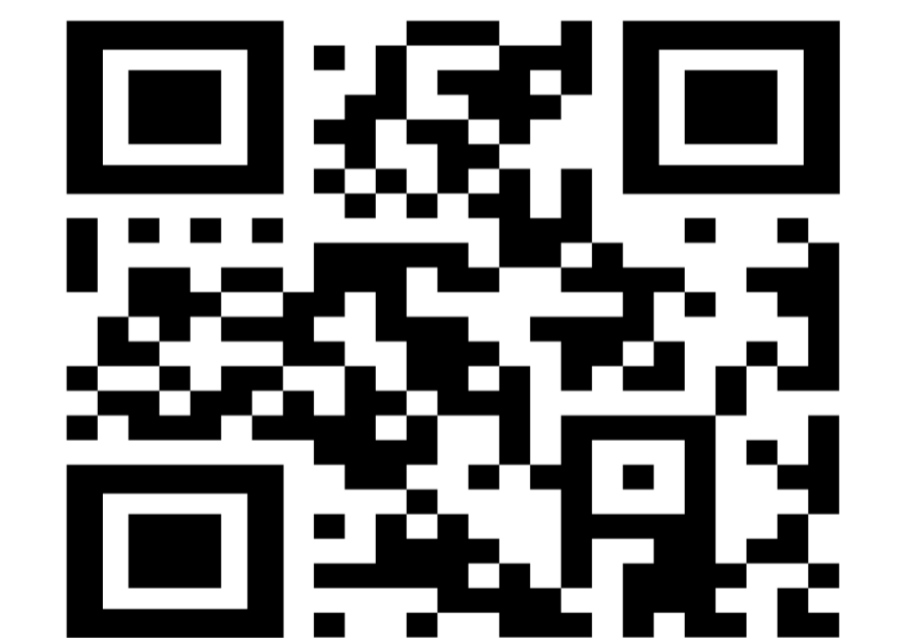
## CONCLUSIONS

Embryo transfer in m-NC yielded a higher live birth rate for the similar number of visits, less hypertension, and lower risks of miscarriage.

## ACKNOWLEDGEMENTS



## REFERENCES



## CONTACT INFORMATION

