

## INTRODUCTION

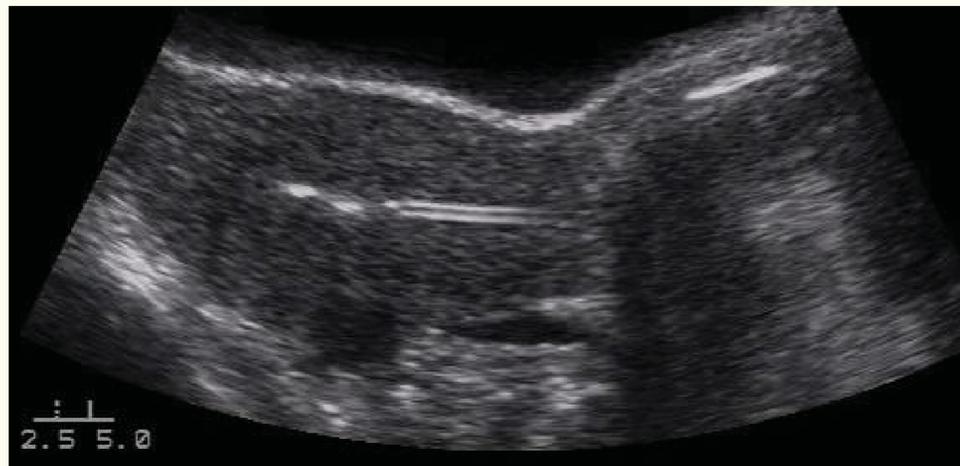
The purpose of this study was to analyse the difficulty of transfer in the frozen embryo transfer (FET) in women with a caesarean scar. Furthermore we wanted to determine if there is an impact on the pregnancy rate with FET.

## DESIGN

Single-center retrospective case-control report.

## METHODS

We included patients who had their first baby by IVF in our center, with fresh or frozen embryo, and we considered the next transfer for patients who had frozen embryo transfer from January 2010 to January 2017. 2 groups of patients were formed according to their first delivery: cesarean section versus vaginal birth. We compared the ease of the transfer which was recorded each time in the medical file into 3 levels : easy, medium or difficult. The clinical pregnancy rate was compared between the two groups regardless of the difficulty of the transfer. Statistical analysis was performed using chi-square and comparison of means where  $p < 0.05$  was considered significant.



## RESULTS

We recruited 492 patients (300 vaginal deliveries and 192 caesarean deliveries). There was no difference between the groups in terms of attempt number prior to the first baby, the time delay between the first baby and the subsequent FET or the endometrial thickness obtained at the FET. However there was significant difference in the age, as patients having had caesarean were older (34.9 +/- 4.2 vs. 36.7 +/- 5.4 years old,  $p < 0.001$ ), and the BMI was higher (24.8 +/- 4.9 vs. 26.1 +/- 5.4 kg/m<sup>2</sup>,  $p < 0.01$ ). There was more egg donation in the group who had a caesarean section (4,0% vs. 15,1%,  $p < 0,05$ ), although a sub-analysis demonstrated that this did not affect the pregnancy rate. The risk of having a difficult embryo transfer following a caesarean delivery was statistically higher (0.3% vs. 5.7%, OR=18.7,  $p < 0.01$ ). However, no difference of clinical pregnancy rate was found between the 2 groups (37,7% for natural birth vs 36,5% for caesarean,  $p = 0,88$ ).

**Table 1.** Ease of embryo transfer depending on the previous delivery method.  
*Values are reported as number of patients with percentage.*

Transfer difficulty	Previous vaginal delivery group (n=300)	Previous cesarean section group (n=192)	p value	Odds Ratio (95% CI)
Easy	93.3% (298/300)	91.1% (175/192)	-	-
Medium	0.3% (1/300)	3.1% (6/192)	< 0.05	10.2 (1.2 - 85.6)
Difficult	0.3% (1/300)	5.7% (11/192)	< 0.05	18.7 (2.3 - 141.9)

**Table 2.** Rate of pregnancy depending on the previous delivery method.  
*Values are reported as mean ± standard deviation or number of patients with percentage.*

	Previous vaginal delivery group (n=300)	Previous cesarean section group (n=192)	p value
Number of transferred embryos	1.14 ± 0.35	1.13 ± 0.35	0.84
Biochemical pregnancy rate	37.6% (113/300)	37.0% (71/192)	0.90
Clinical pregnancy rate	37.6% (113/300)	36.4% (70/192)	0.99
Ectopic pregnancy rate	2.7% (3/113)	1.4% (1/70)	0.99

## CONCLUSIONS

It is already known that patients having caesarean delivery are older and have a higher BMI than those who deliver vaginally. Based on our data, embryo transfer is more difficult in patients with a cesarean scar but it doesn't impact the clinical pregnancy rate.

## SUPPORT

None.