



Introduction:

The role of Endometrial Scratching, also known as endometrial injury, has been a debate for many years, with conflicting results. While some studies showed better implantation rates, others showed no benefit of endometrial injury on pregnancy outcomes. It is believed that the inflammation caused by endometrial injury can lead to the release of growth factors and cytokines that may improve embryo implantation.

	Scratching Group (n=189)	Control Group (n=192)	P-value
Age, years	34.1 ± 4.3	33.9 ± 4.0	0.48
BMI, kg/m ²	25.4 ± 5.1	25.3 ± 5.7	0.57
FSH (IU/L)	7.1 ± 2.7	7.0 ± 2.8	0.79
E2 (pmol/L)	167.0 ± 97.0	165.3 ± 106.6	0.41
AMH (ng/ml)	3.9 ± 6.1	3.5 ± 3.6	0.94
AFC	20.8 ± 11.6	20.3 ± 11.3	0.58
Total Number of previous pregnancy n (%)			0.79
0	105 (55.6%)	117 (61.0%)	
1	50 (26.5%)	36 (18.8%)	
2	20 (10.6%)	16 (8.3%)	
3	8 (4.2%)	14 (7.3%)	
≥4	6 (3.2%)	9 (4.7%)	
Previous Pregnancies	0.78 ± 1.3	0.80 ± 1.3	0.60
IUIs over the 3 months	1.6 ± 0.8	1.9 ± 0.8	0.001

Table 1. Participants baseline characteristics

Should we close the book on endometrial scratching?

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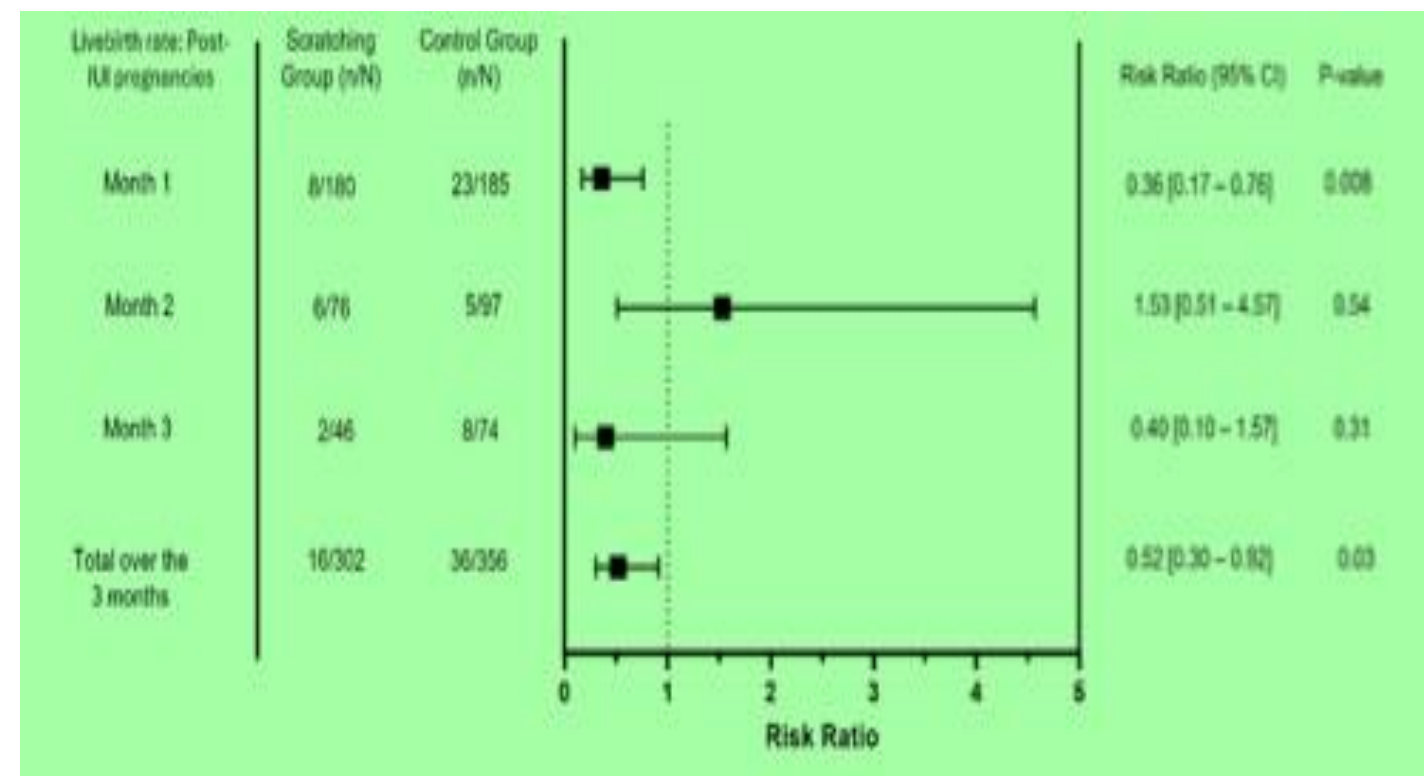


Figure 1: Forest plot comparing the livebirth rate following IUI for patients with and without scratching

Study design, size, duration:

This randomised controlled trial was conducted at the ovo clinic, a university-affiliated fertility center in Montreal, from May 2018 to March 2022.

A total of 394 participants were recruited for the study and were randomized into the control group (n=196) and the scratching group (n=198)

Participants/materials, setting, methods:

Couples with unexplained infertility and an indication for IUI were recruited. In the study group, endometrial scratching was performed during the follicular phase. All patients were followed for 3 consecutive months following randomisation.

Ovarian stimulation was done for 5 days from day 2 or 3 of the cycle, and once the dominant follicle reached 18 mm and endometrial thickness reached at least 6.5 mm, HCG trigger was given and iui was done 36 hours later.



RESULTS:

Main results and the role of chance: The live birth rate analysis of the post-insemination pregnancies over the 3 cycles following the ES, resulted in a risk ratio of 0.52 (95% CI: 0.30-0.92), indicating a significant reduction in live birth rates in the scratching group compared to the control group (p = 0.03)

The compilation of results over the 3-month period shows that out of the 302 IUIs performed in the scratching group, 10.6% IUIs resulted in a pregnancy, compared to 12.4% in the control group (p = 0.54)

Among these pregnancies, 40.6% resulted in miscarriages in the ES group, compared to 18.2% in the control group, the results were statistically significant (p = 0.04).

Main weakness of this study was that the causes of infertility were not correlated to the outcomes observed.

CONCLUSION:

Our study demonstrated that endometrial scratching does not increase pregnancy rates in our population on the other hand that it might have negative impact on pregnancy outcomes, since it was shown to decrease live birth rates, especially in the month in which the endometrial scratching was performed. Moreover, since the procedure carries extra cost and could be painful, we suggest that endometrial scratching must not be routinely employed prior to IUI cycles.

	Post-IUI pregnancies		
	Scratching Group	Control Group	P-value
Month 1	n=180 ^a	n=185 ^a	
Biochemical pregnancy	16 (8.9%)	27 (14.6%)	0.10
Miscarriage	6 (37.5%)	4 (14.8%)	0.13
Ectopic pregnancy	1 (6.2%)	0 (0.0%)	0.37
Abortion	1 (6.2%)	0 (0.0%)	0.37
Livebirth	8 (50.0%)	23 (85.2%)	0.03
Month 2	n=76 ^a	n=97 ^a	
Biochemical pregnancy	8 (10.5%)	7 (7.2%)	0.56
Miscarriage	2 (25%)	2 (28.6%)	>0.99
Ectopic pregnancy	0 (0.0%)	0 (0.0%)	>0.99
Abortion	0 (0.0%)	0 (0.0%)	>0.99
Livebirth	6 (75.0%)	5 (71.4%)	>0.99
Month 3	n=46 ^a	n=74 ^a	
Biochemical pregnancy	8 (17.4%)	10 (13.5%)	0.60
Miscarriage	5 (62.5%)	2 (20%)	0.14
Ectopic pregnancy	1 (12.5%)	0 (0.0%)	0.44
Abortion	0 (0.0%)	0 (0.0%)	>0.99
Livebirth	2 (25.0%)	8 (80.0%)	0.05
Total over of the 3 months	n=302 ^a	n=356 ^a	
Biochemical pregnancy	32 (10.6%)	44 (12.4%)	0.54
Miscarriage	13 (40.6%)	8 (18.2%)	0.04
Ectopic pregnancy	2 (6.2%)	0 (0.0%)	0.17
Abortion	1 (3.1%)	0 (0.0%)	0.42
Livebirth	16 (50%)	36 (81.8%)	0.005

Table 2: pregnancy outcomes