

Corrigendum. ICSI does not improve reproductive outcomes in autologous ovarian response cycles with non-male factor subfertility

**P.R. Supramanian^{1,*}, I. Granne^{1,2,3}, E.O. Ohuma^{4,5}, L.N. Lim^{1,3},
E. McVeigh^{1,2,3}, R. Venkatakrishnan⁶, C.M. Becker^{1,2,3}, and M. Mittal⁷**

¹Oxford University Hospitals NHS Foundation Trust, John Radcliffe Hospital, Oxford OX3 9DU, UK ²Oxford Endometriosis CaRe Centre, Nuffield Department of Women's and Reproductive Health, University of Oxford, Oxford OX3 9DU, UK ³Oxford Reproductive Medicine, The Manor Hospital, Oxford OX3 7RP, UK ⁴Centre for Tropical Medicine and Global Health, Nuffield Department of Medicine, University of Oxford, Oxford OX3 7BN, UK ⁵Centre for Global Child Health & Child Health Evaluative Sciences, Hospital for Sick Children, Toronto, Canada M5G 2L3 ⁶University Hospitals of Derby and Burton NHS Foundation Trust, Department of Obstetrics and Gynaecology, Derby DE22 3NE, UK ⁷Imperial College Healthcare NHS Trust, St Mary's Hospital, Department of Obstetrics and Gynaecology, London W2 1NY, UK

*Correspondence address. Oxford University Hospitals NHS Foundation Trust, John Radcliffe Hospital, Headley Way, Headington, Oxford OX3 9DU, UK. E-mail: prasannaraj@doctors.org.uk

Hum Reprod 2020;**35**: pp. 583–594

The authors would like to apologise for the errors in [Table 1](#), [Table 3](#) and the manuscript of the above article. The errors, unfortunately, occurred in the process of transcribing the data across three platforms

(Microsoft Excel, SPSS and then on to Microsoft Word). This has now been rechecked by three different individuals to avoid further transcription errors. Amendments have also been made to [Table 4](#) to further clarify its intention.

Table 1 Distribution of IVF and ICSI cycles in poor ovarian response according to female age groups, number of previous ART cycles, number of previous live birth(s) through ART, oocyte yield, stage of transfer, number of embryos transferred and a sub-analysis of all ovarian response categories.

Variables	Total IVF and ICSI Cycles (n)	IVF Cycles (n) (%)	ICSI Cycles (n) (%)	*aOR (99.5% CI) Method of Fertilisation	P Value
Age (yrs)					
18-34	15386	7840 (24%)	7546 (26%)	1	
35-37	14426	7793 (23%)	6633 (23%)	0.85 (0.80–0.91)	<0.001
38-39	13275	7133 (21%)	6142 (21%)	0.85 (0.80–0.91)	<0.001
40-42	13709	7435 (22%)	6274 (21%)	0.81 (0.76–0.87)	<0.001
43-44	4379	2430 (7%)	1949 (7%)	0.77 (0.70–0.85)	<0.001
45-50	1466	805 (3%)	661 (2%)	0.79 (0.68–0.92)	<0.001
Number of previous ART Cycles					
0	31742	18556 (55%)	13186 (45%)	1	
1	15077	7660 (23%)	7417 (25%)	1.38 (1.31–1.46)	<0.001
2	7851	3662 (11%)	4189 (14%)	1.63 (1.52–1.75)	<0.001
3	3711	1673 (5%)	2038 (7%)	1.74 (1.58–1.92)	<0.001
4	1896	857 (3%)	1039 (4%)	1.71 (1.50–1.95)	<0.001
5	1007	437 (1%)	570 (2%)	1.83 (1.54–2.19)	<0.001
>5	1357	591 (2%)	766 (3%)	1.88 (1.61–2.20)	<0.001
Number of previous live birth(s) through ART					
0	58083	31361 (94%)	26722 (92%)	1	
1	4357	1993 (6%)	2364 (8%)	1.06 (0.96–1.16)	0.107
2	182	78 (0%)	104 (0%)	1.10 (0.73–1.66)	0.504
3	19	4 (0%)	15 (0%)	4.46 (0.75–26.52)	0.019
Poor response oocyte yield					
1	12277	7311 (22%)	4966 (17%)	0.71 (0.67–0.75)	<0.001
2	21295	11412 (34%)	9883 (34%)	0.90 (0.86–0.95)	<0.001
3	29069	14713 (44%)	14356 (49%)	1	
Sub-analysis by oocyte yield					
1-3 oocytes	62641	33436 (12%)	29205 (10%)	0.84 (0.79–0.88)	<0.001
4-9 oocytes	239136	115639 (43%)	123497 (42%)	0.99 (0.94–1.04)	0.451
10-15 oocytes	169788	78504 (29%)	91284 (31%)	1.04 (0.99–1.10)	0.019
16-20 oocytes	61281	27829 (10%)	33452 (11%)	1.07 (1.01–1.13)	0.001
21-25 oocytes	23486	10750 (4%)	12736 (4%)	1.05 (0.99–1.12)	0.017
>25 oocytes	13273	6275 (2%)	6998 (2%)	1	
Stage of transfer in poor response cycles					
Cleavage	15892	8067 (33%)	7825 (34%)		
Blastocyst	31849	16673 (67%)	15176 (66%)		
Number of embryos transferred in poor response cycles					
0	14536	8400 (25%)	6136 (21%)		
1	25298	12557 (38%)	12741 (44%)		
2	21494	11715 (35%)	9779 (33%)		
3	1313	764 (2%)	549 (2%)		

*Multivariable logistic regression—adjusted for female age, number of previous ART cycles, number of previous live births through ART, oocyte yield. The data is expressed as whole numbers and percentages. The adjusted Odds Ratio (aOR) is displayed as the odds of performing ICSI over IVF for each of the variables.

Table III Clinical pregnancy, live birth, singleton and multiple birth rate per treatment cycle in all ovarian response for IVF and ICSI cycles distributed by the variables female age, number of previous ART cycles, number of previous live births through ART, oocyte yield and stage of embryo transfer expressed in whole numbers and as a percentage.

Variables	IVF				ICSI			
	Clinical Pregnancy (n) (%)	Live birth Rate (n) (%)	Singleton Live birth (n) (%)	Multiple Births (n) (%)	Clinical Pregnancy (n) (%)	Live birth Rate (n) (%)	Singleton Live birth (n) (%)	Multiple Births (n) (%)
All Cycles	97708 (35.9)	84725 (31.1)	55558 (20.4)	29167 (10.7)	111011 (37.4)	96754 (32.6)	64779 (21.8)	31975 (10.8)
Age (yrs)								
18-34	51497 (38.8)	46231 (34.9)	29078 (21.9)	17153 (12.9)	64854 (45.0)	58292 (40.4)	37575 (26.1)	20717 (14.4)
35-37	26156 (34.0)	22682 (29.5)	14937 (19.4)	7745 (10.1)	26646 (38.1)	23076 (33.0)	15792 (22.6)	7284 (10.4)
38-39	12497 (25.5)	10216 (20.9)	7258 (14.8)	2958 (6.0)	12153 (29.2)	10019 (24.0)	7276 (17.5)	2743 (6.6)
40-42	6834 (17.0)	5133 (12.7)	3893 (9.7)	1240 (3.1)	6676 (20.3)	4942 (15.0)	3752 (11.4)	1190 (3.6)
43-44	667 (6.9)	426 (2.4)	363 (3.7)	63 (0.6)	632 (8.9)	393 (5.5)	360 (5.1)	33 (0.5)
45-50	57 (2.2)	37 (1.5)	29 (1.1)	8 (0.3)	50 (2.8)	32 (1.8)	24 (1.3)	8 (0.4)
Number of previous ART Cycles								
0	60749 (32.8)	53097 (28.7)	35745 (19.3)	17352 (9.4)	57704 (39.9)	50692 (35.1)	34905 (24.2)	15787 (10.9)
1	17425 (28.5)	15004 (24.6)	9634 (15.8)	5370 (8.8)	24526 (35.2)	21393 (30.7)	14083 (20.2)	7310 (10.5)
2	9702 (30.9)	8337 (26.6)	5138 (16.4)	3199 (10.2)	13782 (35.3)	11977 (30.7)	7818 (20.0)	4159 (10.6)
3	4697 (30.0)	3981 (25.4)	2437 (15.6)	1544 (9.9)	7217 (35.6)	6128 (30.2)	3851 (19.0)	2277 (11.2)
4	2457 (30.4)	2054 (25.4)	1232 (15.3)	822 (10.2)	3806 (34.6)	3223 (29.3)	2010 (18.3)	1213 (11.0)
5	1208 (28.3)	1008 (23.6)	602 (14.1)	406 (9.5)	1863 (32.1)	1607 (27.7)	995 (17.2)	612 (10.5)
>5	1470 (25.8)	1244 (21.9)	770 (13.5)	474 (8.3)	2113 (30.6)	1734 (25.1)	1117 (16.2)	617 (8.9)
Number of previous live birth(s) through ART								
0	90424 (31.0)	78457 (26.9)	51651 (17.7)	26806 (9.2)	99673 (36.8)	86915 (32.1)	58299 (21.5)	28616 (10.6)
1	6993 (37.7)	6021 (32.5)	3724 (20.1)	2297 (12.4)	10880 (42.5)	9447 (36.9)	6208 (24.3)	3239 (12.7)
2	271 (37.6)	233 (32.3)	175 (24.3)	58 (8.0)	439 (41.6)	374 (35.5)	260 (24.6)	114 (10.8)
3	20 (37.0)	14 (25.9)	8 (14.8)	6 (11.1)	19 (28.8)	18 (27.3)	12 (18.2)	6 (9.1)
Oocyte Yield								
1-3	4947 (14.8)	4071 (12.2)	3193 (9.5)	878 (2.6)	4293 (14.7)	3607 (12.4)	2913 (10.0)	694 (2.4)
4-9	38816 (33.6)	33405 (28.9)	22348 (19.3)	11057 (9.6)	44283 (35.9)	35708 (28.9)	24738 (20.0)	10970 (8.9)
10-15	34558 (44.0)	30241 (38.5)	19264 (24.5)	10977 (14.0)	38141 (41.8)	36103 (39.6)	23575 (25.8)	12528 (13.7)
16-20	12877 (46.3)	11326 (40.7)	7189 (25.8)	4137 (14.9)	16112 (48.2)	14129 (42.2)	9054 (27.1)	5075 (15.2)
21-25	4668 (43.4)	4093 (38.1)	2531 (23.5)	1562 (14.5)	5796 (45.5)	5102 (40.1)	3177 (24.9)	1925 (15.1)
>25	1842 (29.4)	1589 (25.3)	1033 (16.5)	556 (8.9)	2386 (34.1)	2105 (30.1)	1322 (18.9)	783 (11.2)
Stage of Transfer								
Cleavage	29447 (38.0)	24967 (32.2)	15758 (20.3)	9209 (11.9)	34204 (37.0)	29425 (31.8)	19305 (20.9)	10120 (10.9)
Blastocyst	68261 (41.5)	59758 (36.3)	39800 (24.2)	19958 (12.1)	76807 (42.1)	67329 (36.9)	45474 (24.9)	21855 (12.0)

Table IV The odds ratio of IVF vs ICSI for clinical pregnancy and live birth outcome subcategorised by 5-year intervals from 2002 up to 2016 for poor ovarian response cohort and by oocyte yield for 1998 to 2016, with 99.5% and 95% confidence intervals and p-values respectively.

Variables		Method of fertilisation (n=number of cycles)	^a OR (99.5% CI) Clinical Pregnancy	P Value	^a OR (99.5% CI) Live Birth	P Value
Year of treatment	2012 – 2016	IVF (n=11,651)	1.04 (0.93 – 1.16)	0.354	1.03 (0.91 – 1.16)	0.500
		ICSI (n=11,362)				
	2007 – 2011	IVF (n=10,743)	1.13 (0.99 – 1.28)	0.010	1.14 (0.99 – 1.30)	0.006
		ICSI (n=9,836)				
	2002 – 2006	IVF (n=7,293)	1.04 (0.89 – 1.22)	0.473	1.04 (0.87 – 1.23)	0.573
		ICSI (n=5,837)				
Oocyte yield	1 – 3 oocytes	IVF (n=33,436)	1.04 (0.97 – 1.12)	0.102	1.03 (0.96 – 1.11)	0.261
		ICSI (n=29,205)				
	4 – 9 oocytes	IVF (n=115,639)	1.02 (0.99 – 1.05)	0.014	1.03 (0.99 – 1.05)	0.012
		ICSI (n=123,497)				
	10 – 15 oocytes	IVF (n=78,504)	0.99 (0.96 – 1.02)	0.314	0.99 (0.96 – 1.02)	0.261
		ICSI (n=91,284)				
	16 – 20 oocytes	IVF (n=27,829)	0.97 (0.92 – 1.02)	0.048	0.98 (0.93 – 1.03)	0.286
		ICSI (n=33,452)				
	21 – 25 oocytes	IVF (n=10,750)	0.97 (0.90 – 1.06)	0.368	0.98 (0.90 – 1.07)	0.480
		ICSI (n=12,736)				
	>25 oocytes	IVF (n=6,275)	0.88 (0.77 – 1.00)	0.005	0.88 (0.77 – 1.01)	0.011
		ICSI (n=6,998)				

Variables		Method of fertilisation (n=number of cycles)	^a OR (95% CI) Clinical Pregnancy	P Value	^a OR (95% CI) Live Birth	P Value
1 st cycle sub-analysis for oocyte yield ^a	1 – 3 oocytes	IVF (n=18,556)	1.05 (0.96 – 1.16)	0.126	1.03 (0.93 – 1.14)	0.451
		ICSI (n=13,186)				
	4 – 9 oocytes	IVF (n=66,863)	1.04 (1.00 – 1.07)	0.005	1.04 (1.00 – 1.08)	0.005
		ICSI (n=58,320)				
	10 – 15 oocytes	IVF (n=47,008)	0.99 (0.96 – 1.03)	0.671	1.00 (0.96 – 1.04)	0.968
		ICSI (n=44,926)				
	16 – 20 oocytes	IVF (n=17,386)	0.97 (0.91 – 1.04)	0.187	1.00 (0.93 – 1.07)	0.997
		ICSI (n=17,252)				
	21 – 25 oocytes	IVF (n=6,967)	1.02 (0.92 – 1.14)	0.530	1.02 (0.92 – 1.14)	0.548
		ICSI (n=6,882)				
	>25 oocytes	IVF (n=4,270)	0.91 (0.77 – 1.07)	0.109	0.92 (0.78 – 1.09)	0.156
		ICSI (n=4,084)				

^aClinical pregnancy and live birth outcome adjusted for female age, number of previous ART cycles, number of previous live birth(s) through ART, oocyte yield, stage of transfer, method of fertilisation and number of embryos transferred.

^aClinical pregnancy and live birth outcome adjusted for female age, oocyte yield, stage of transfer, method of fertilisation and number of embryos transferred.

We would like to emphasise that the transcription errors had no impact on the message of the publication and its academic value. Whilst the 'n' numbers were affected, the odds ratio and confidence interval calculations were not, thus preserving the overall scientific impact of the findings from the study.