

Supplemental File S1. The search strategy.

PubMed

- #1 "In Vitro Fertilization" [TIAB]
- #2 fertilization in vitro [MeSH]
- #3 Assisted Reproductive Techniques [MeSH]
- #4 Embryo Transfer [MeSH]
- #5 Intracytoplasmic Sperm Injection [MeSH]
- #6 Cryopreserved [TIAB]
- #7 "Oocyte donation" [TIAB]
- #8 "fresh cycle" [TIAB]
- #9 "frozen cycle" [TIAB]
- #10 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9
- #11 Endometriosis [MeSH]
- #12 endometriosis [TIAB] OR endometrioma [TIAB] OR "chocolate cyst" [TIAB]
- #13 adhesion [TIAB] OR "ectopic endometri*" [TIAB]
- #14 peritoneal [TIAB] OR abdominal [TIAB] OR pelvic [TIAB] OR Douglas [TIAB] OR "uterine wall" [TIAB] OR "anterior wall" [TIAB] OR "posterior wall" [TIAB] OR abdominal [TIAB] OR ovary [TIAB] OR extrauterine [TIAB] OR extraovarian [TIAB] OR cul-de-sac [TIAB] OR adnexal [TIAB] 635,500
- #15 #13 AND #14
- #16 #11 OR #12 OR #15
- #17 Placenta previa [MeSH]
- #18 "placenta previa" [TIAB] OR "low lying placenta" [TIAB]
- #19 "abnormal placenta*" [TIAB]
- #20 Placenta accreta [MeSH]
- #21 "Morbidly adherent placenta" [TIAB] OR "Morbid adherent placenta" [TIAB]
- #22 "Placenta accreta spectrum " [TIAB]
- #23 "Placenta accreta" [TIAB] OR "Placenta increta" [TIAB] OR "placenta percreta" [TIAB]
- #24 "adherence of the placenta" [TIAB] OR "adherent placenta" [TIAB]
- #25 #17 OR #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24
- #26 #16 AND #25

Cochrane Library

- #1 "In Vitro Fertilization":ab,ti,kw
- #2 MeSH descriptor: [fertilization in vitro] explode all trees
- #3 MeSH descriptor: [Assisted Reproductive Techniques] explode all trees
- #4 MeSH descriptor: [Embryo Transfer] explode all trees
- #5 MeSH descriptor: [Intracytoplasmic Sperm Injection] explode all trees

#6 Cryopreserved:ab,ti,kw
 #7 "Oocyte donation":ab,ti,kw
 #8 "fresh cycle":ab,ti,kw
 #9 "frozen cycle":ab,ti,kw
 #10 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9
 #11 MeSH descriptor: [Endometriosis] explode all trees
 #12 endometriosis:ab,ti,kw OR "endometrioma:ab,ti,kw OR "chocolate cyst":ab,ti,kw
 #13 #11 OR #12
 #14 adhesion:ab,ti,kw OR ectopic endometrium:ab,ti,kw
 #15 peritoneal:ab,ti,kw OR abdominal:ab,ti,kw OR pelvic:ab,ti,kw OR Douglas:ab,ti,kw OR "uterine wall":ab,ti,kw OR "anterior wall":ab,ti,kw OR "posterior wall":ab,ti,kw OR abdominal:ab,ti,kw OR ovary:ab,ti,kw OR extrauterine:ab,ti,kw OR extraovarian:ab,ti,kw OR cul-de-sac:ab,ti,kw OR adnexal:ab,ti,kw
 #16 #14 AND #15
 #17 #13 OR #16
 #18 MeSH descriptor: [Placenta previa] explode all trees
 #19 "Placenta previa":ab,ti,kw OR "low lying placenta":ab,ti,kw
 #20 "abnormal placenta":ab,ti,kw
 #21 MeSH descriptor: [Placenta accreta] explode all trees
 #22 "Morbidly adherent placenta":ab,ti,kw OR "Morbid adherent placenta":ab,ti,kw
 #23 "Placenta accreta spectrum":ab,ti,kw
 #24 "Placenta accreta":ab,ti,kw OR "Placenta increta":ab,ti,kw OR "Placenta percreta":ab,ti,kw
 #25 "adherence of placenta":ab,ti,kw OR "adherence of the placenta":ab,ti,kw OR "adherent placenta":ab,ti,kw
 #26 #18 OR #19 OR #20 OR #21 OR #22 OR #23 OR #24 OR #25
 #27 #17 AND #26

Scopus

#1 TITLE-ABS-KEY ("In Vitro Fertilization")
 #2 TITLE-ABS-KEY ("fertilization in vitro")
 #3 TITLE-ABS-KEY ("Assisted Reproductive Techniques" OR "Assisted Reproductive Technology")
 #4 TITLE-ABS-KEY ("Embryo Transfer")
 #5 TITLE-ABS-KEY ("Intracytoplasmic Sperm Injection")
 #6 TITLE-ABS-KEY ("Cryopreserved")
 #7 TITLE-ABS-KEY ("oocyte donation")
 #8 TITLE-ABS-KEY ("fresh cycle")
 #9 TITLE-ABS-KEY ("frozen cycle")

#10 #1 OR #2 OR #3 OR #4 OR #5 OR #6 OR #7 OR #8 OR #9

#11 TITLE-ABS-KEY ("endometriosis" OR "endometrioma" OR "chocolate cyst")

#12 TITLE-ABS-KEY ("adhesion" OR "ectopic endometrium")

#13 TITLE-ABS-KEY (peritoneal OR abdominal OR pelvic OR Douglas OR "uterine wall" OR "anterior wall" OR "posterior wall" OR abdominal OR ovary OR extrauterine OR extraovarian OR cul-de-sac OR adnexal)

#14 #12 AND #13

#15 #11 OR #14

#16 TITLE-ABS-KEY ("placenta previa" OR "low lying placenta")

#17 TITLE-ABS-KEY ("abnormal placentation")

#18 TITLE-ABS-KEY ("Morbidly adherent placenta" OR "Morbid adherent placenta")

#19 TITLE-ABS-KEY ("Placenta Accreta Spectrum")

#20 TITLE-ABS-KEY ("Placenta accreta" OR "Placenta increta" OR "Placenta percreta")

#21 TITLE-ABS-KEY ("adherence of placenta" OR "adherence of the placenta" OR "adherent placenta")

#22 #16 OR #17 OR #18 OR #19 OR #20 OR #21

#23 #15 AND #22

Supplemental Table S1. Meta data of included studies.

Author	Location	Year	Period	Type	Match	Exp	Control	Total	Total No. End	Exp No. End	Control No. End	No. Exp	No. Control	End PAS	ART PP	ART PAS
Wang Y ¹	CHN	2021	2013-2018	Nationwide	--	ART	No ART	16879728	--	--	--	269738	16609990	--	Yes	Yes
Zargar M ²	IRN	2021	--	Retro	--	Frozen	Fresh	669	--	--	--	356	313	--	Yes	--
Hu KL ³	CHN	2021	2013-2019	Retro	--	HRC	NC	7021	--	--	--	2561	3790	--	Yes	--
Asserhøj LL ⁴	DNK	2021	2006-2014	Retro	--	HRC	NC	1136	33	16	17	357	779	--	Yes	--
Wang J ⁵	CHN	2021	2009-2018	Retro	Yes	ART_end	No ART	8773	74	74	--	1241	6832 ^d	Yes	Yes	Yes
Epelboin S ⁶	FRN	2021	2013-2018	Nationwide	--	ART_end SC_end	ART_non-end SC_non-end	4121767	38035	6934 31101	31101 0	6934 31101	31101 4083732	--	Yes	--
Cochrane E ⁷	CHN	2020	2015-2018	Retro	Yes	ART	SC	360	--	--	--	120	240 ^d	--	Yes	Yes
Modest AM ⁸	USA	2020	2013-2018	Retro	--	ART	No ART	28344	--	--	--	1418	26926	--	--	Yes
Salmanian B ⁹	USA	2020	2012-2019	Retro	--	ART	No ART	37461	--	--	--	571	36890	--	Yes	Yes
Shinohara S ¹⁰	JPN	2020	2012-2017	Retro	--	ART	SC	2583	--	--	--	442	1764	--	Yes	--
Farella M ¹¹	ITA	2020	2009-2016	Retro	--	Frozen	Fresh	535	--	--	--	330	112	--	Yes	--
Petersen SH ¹²	ITA	2020	2009-2016	Retro	--	ART_end	SC_end	535	535	199	336	199	336	--	Yes	--
Petersen SH ¹²	NOR	2020	1994-2015	Nationwide	--	ART	SC	6830578	--	--	--	146998	6683580	--	Yes	--
Spangmose AL ¹³	NOR	2020	1997-2015 Overlapped ¹²	Nationwide	--	ART [†]	SC	2864880	--	244	Unk	4601	2808323	--	Yes	--
Tanaka H ¹⁴	JPN	2020	2015-2017	Retro	--	ART	No ART	6952	--	--	--	811	6141	--	Yes	Yes
Kyozuka H ¹⁵	JPN	2019	2011-2014	Nationwide	--	ART	No ART	90554	--	--	--	2658	87896	--	--	Yes
Miura M ¹⁶	JPN	2019	2010-2017	Retro	--	ART	No ART	2769	80	23	57	366	2403	--	Yes	--
Santi E ¹⁷	ITA	2019	2014-2018	Retro	--	ART	No ART	11769	--	--	--	281	11488	--	Yes	--
Sakai Y ¹⁸	JPN	2019	2015-2017	Retro	--	Frozen	Fresh ^c	87	--	--	--	60	27	--	Yes	Yes
Saito K ¹⁹	JPN	2019	2014	Nationwide	--	HRC	NC	34980	--	--	--	24225	10755	--	Yes	Yes
Szymusik ¹²⁰	POL	2019	2004-2014	Retro	Yes	ART	SC	634	--	33	Unk	336	308 ^d	--	Yes	--
Yang P ²¹	CHN	2019	2015-2018	Retro	Yes	ART	No ART	4989	--	--	--	1663	3326 ^d	--	Yes	--
Nagata C ²²	JPN	2019	2011-2014 overlapped ¹⁵	Nationwide	--	ART	SC	97592	--	--	--	3147	90506	--	Yes	#
Rahu K ²³	EST	2019	2005-2014	Nationwide	--	ART	SC	35333	--	--	--	1778	33555	--	Yes	--
Shmueli A ²⁴	ISR	2019	2007-2014	Retro	--	End	Non-end	61535	135	135	61400	135	61400	Yes	--	--
Nirgianakis K ²⁵	CHE	2018	2004-2015	Retro	Yes	End	Non-end	248	62	62	186	62	186 ^d	Yes	--	--
Sabban H ²⁶	CAN	2017	2008-2011	Nationwide	--	ART	No ART	3315764	--	--	--	5773	3309991	--	Yes	--
Li H ²⁷	CHN	2017	2011-2013	Retro	Yes	ART_end	No ART_end	375	75	24	74	24	74 ^d	--	Yes	--
Berlac JF ²⁸	DNK	2017	1977-2014	Nationwide	--	End	Non-end	1091251 ^b	19331 ^b	19331	0	19331	1071920	Yes	--	--
Qin J ²⁹	CHN	2017	2013-2016	Retro	--	ART	SC	7023	--	--	--	1260	2480	--	Yes	--
Fujii T ³⁰	JPN	2016	2000-2014	Retro	--	ART_end	ART_non-end	604	92	92	0	92	512	--	Yes	--
Zhu L ³¹	CHN	2016	2006-2014	Retro	Yes	ART	SC	7923	--	--	--	2641	5282 ^d	--	Yes	Yes
Benaglia L ³²	ITA	2016	2008-2014	Retro	Yes	ART_end	ART_non-end	478	--	--	--	239	239 ^d	--	Yes	--
Wennberg AL ³³	DNK	2016	1982-2007 Overlapped ¹²	Nationwide	--	ART	SC	273536	--	--	--	35571	237965	--	Yes	--
Jacques M ³⁴	FRN	2016	2009-2014	Retro	Yes	ART_end	ART_non-end	2315	113	113	0	113	113 ^d	--	Yes	--
Ginström E ³⁵	SWE	2016	2002-2013	Nationwide	--	ART	SC	1226960	--	--	--	30566	1196394	--	Yes	--
Valenzuela B ³⁶	ESP	2016	2004-2010	Retro	--	Frozen	Fresh	30566	--	--	--	7795	22771	--	Yes	--
Takeshima K ³⁷	JPN	2016	2007-2012	Nationwide	--	ART	No ART	948	--	--	--	223	725	--	Yes	--
Kaser DJ ³⁸	USA	2015	2005-2011	Retro	Yes	Frozen	Fresh	141,228	--	--	--	90783	50445	--	Yes	Yes
Rombauts L ³⁹	AUS	2014	2006-2012	Retro	--	Frozen	Fresh	199	--	--	--	42	157	--	--	Yes
Korosec S ⁴⁰	SVN	2014	2004-2011	Retro	--	Frozen	Fresh	4537	316	99	217	1586	2951	--	Yes	--
Yang X ⁴¹	CHN	2014	2011	Retro	--	Frozen	Fresh	1126	229	42	187	211	915	--	Yes	Yes
Yang X ⁴¹	CHN	2014	2011	Retro	--	ART	SC	112403	--	--	--	1139	111264	--	Yes	--
Ishihara O ⁴²	JPN	2014	2008-2010	Nationwide	--	ART	SC	112403	--	--	--	1139	111264	--	Yes	--
Ishihara O ⁴²	JPN	2014	2008-2010	Nationwide	--	Frozen	Fresh	48158	--	--	--	31249	16909	--	Yes	Yes

			overlapped ³⁷													
Räsänen S ⁴³	FIN	2013	2006-2010	Nationwide	--	ART	No ART	291004	--	--	--	5647	285357	--	Yes	--
Liu SY ⁴⁴	CHN	2013	2006-2011	Retro	--	Frozen ^a	Fresh ^a	16492	--	--	--	1531	1914	--	Yes	--
Takemura Y ⁴⁵	JPN	2013	--	Retro	--	ART_end	ART_non-end	318	53	53	0	53	265	--	Yes	--
Sazonova A ⁴⁶	SWE	2012	2002-2006 Overlapped ³⁵	Nationwide	--	Frozen	Fresh	11292	--	--	--	2348	8944	--	Yes	--
Hayashi M ⁴⁷	JPN	2012	2001-2005	Nationwide	Yes	ART	SC	25069	--	--	--	4570	4264	--	Yes	Yes
Benaglia L ⁴⁸	ESP	2012	2005-2009	Retro	Yes	ART_end	ART_non-end	234	78	78	0	78	156	--	Yes	--
Esh-Broder E ⁴⁹	ISR	2011	2004-2009	Retro	--	ART	SC	25193	--	--	--	752	24441	--	--	Yes
						ART	No ART					6730	24619			
Healy DL ⁵⁰	AUS	2010	1991-2004	Nationwide	--	Frozen	Fresh	34295	--	--	--	2503	4227	--	Yes	--
						ART_end	ART_non-end			1265	0	1265	5465			
Verlaenen H ⁵¹	BEL	1995	1988-1994	Retro	Yes	ART	No ART	280	--	--	--	140	140	--	Yes	--
Hill GA ⁵²	USA	1990	1982-1988	Retro	Yes	ART	No ART	182	--	--	--	61	121	--	Yes	--

† blastocyst transfer; # the data about PAS was not used due to the overlapping data²²; ^a: day 3 embryo ^b: No. of infants ^c: ovulation cycle ^d: patient background matched control cases. Some values listed above might be slightly different from the original values, as estimated by the authors. Abbreviations: Exp, Experimental; End, endometriosis; PAS, placenta accreta spectrum; PP, placenta previa; ART, assisted reproductive technology; Period, study period; Retro, retrospective study; Nationwide, nationwide study; Type, type of study; --, not applicable; Frozen, frozen embryo transfer; Fresh, fresh embryo transfer; Match, patient background matched study; No., number; END PAS, the study examined the effect of endometriosis on the prevalence of PAS; ART PP, the study determined the effect of ART on the prevalence of placenta previa; ART PAS, the study investigated the influence of ART on the prevalence of placenta accreta spectrum; ART_end; women with endometriosis conceived by ART; ART_non-end; women without endometriosis conceived by ART; SC_end; Spontaneous conception with endometriosis; SC_non-end; Spontaneous conception without endometriosis; HRC, hormone replacement cycle; NC, natural cycle; Unk, unknown; AUS, Australia; BEL, Belgium; CHE, Switzerland; CHN, China; DNK, Denmark; ESP, Spain; EST, Estonia; FIN, Finland; FRN, France; GBR, United Kingdom; IRN, Iran; ISR, Israel; ITA, Italia; JPN, Japan; NOR, Norway; POL, Poland; SVN, Slovenia; SWE, Sweden; USA, United States of America.

Supplemental Table S2. Metadata of studies (the rate of placenta previa: ART versus No ART and SC).

	Year	Exp	Control	ART End	No ART End	End ART	Non-End ART	Exp Previa	Control Previa	Adjusted OR (95%CI)	Exp End	Control End	Exp Previa	Control Previa	No. Exp	No. Control
Wang Y ¹	2021	ART	No ART	--	--	--	--	12376 (4.6%)	325504 (2%)	--	--	--	12376	325504	269738	16609990
Wang J ⁵	2021	ART	No ART	74/1241 (6.0%)		74 (100%)		47 (3.8%)	94 (1.4%)	9.33 (4.22-20.62)	74	--	47	94	1241	6832
Epelboin S ^{6,a}	2021	ART_end	SC_end	100%	100%	6934/38035 (18.2%)	--	330 (4.8%)	520 (1.7%)	2.43 (2.10-2.82)	38035	--	330	520	6934	31101
Cochrane E ⁷	2020	ART	SC	--	--	--	--	5 (4.2%)	1 (0.4%)	--	--	--	5	1	120	240
Salmanian B ⁹	2020	ART	No ART	--	--	--	--	10 (1.8%)	271 (0.7%)	--	--	--	10	271	571	36890
Shinohara S ¹⁰	2020	ART	SC	--	--	--	--	3 (0.7%)	18 (1%)	--	--	--	3	18	442	1764
Farella M ^{11,a}	2020	ART_end	SC_end	100%	100%	199/535 (37.2%)	--	7 (3.5%)	2 (0.6%)	--	535	0	7	2	199	336
Petersen SH ¹²	2020	ART	SC	--	--	--	--	2560(1.7%)	22410 (0.3%)	3.87 (3.70-4.04)	--	--	2560	22410	146998	6683580
Tanaka H ¹⁴	2020	ART	No ART	--	--	--	--	34 (4.2%)	96 (1.6%)	1.96 (1.24–3.06)	--	--	34	96	811	6141
Miura M ¹⁶	2019	ART	No ART	--	--	23/80 (28.8%)	343/2689 (12.8%)	--	--	2.71 (1.70–4.31)	23	57	--	--	366	2403
Santi E ¹⁷	2019	ART	No ART	--	--	--	--	9 (3.2%)	68 (0.6%)	--	--	--	9	68	281	11488
Szymusik I ²⁰	2019	ART	SC	33/336 (9.1%)	--	--	--	11 (3.3%)	2 (0.6%)	--	33	--	11	2	336	308
Yang P ²¹	2019	ART	No ART	--	--	--	--	191 (11.5%)	254 (7.6%)	--	--	--	191	254	1663	3326
Nagata C ²²	2019	ART	SC	--	--	--	--	66 (2.1%)	489 (0.5%)	2.44 (1.87–3.20) ^b	--	--	66	489	3147	90506
Rahu K ²³	2019	ART	SC	--	--	--	--	22 (1.2%)	51 (0.2%)	--	--	--	22	51	1778	33555
Sabban H ²⁶	2017	ART	No ART	--	--	--	--	200 (3.5%)	18801 (0.6%)	3.14(2.71-3.64)	--	--	200	18801	5773	3309991
Li H ²⁷	2017	ART_end	No ART_end	100%	100%	24/98 (24.5%)	--	2 (8.3%)	0 (0%)	--	24	74	2	0	24	74
Qin J ²⁹	2017	ART	No ART	--	--	--	--	--	--	4.11 (2.12-7.96)	--	--	--	--	1260	2480
Zhu L ³¹	2016	ART	SC	--	--	--	--	185 (7%)	179 (3.4%)	2.23 (1.79–2.78)	--	--	185	179	2641	5282
Ginström E ³⁵	2016	ART	SC	--	--	--	--	531 (1.7%)	3443 (0.3%)	6.38 (5.31-7.66) ^a	--	--	531	3443	30566	1196394
Valenzuela B ³⁶	2016	ART	No ART	--	--	--	--	3 (1.3%)	5 (0.7%)	--	--	--	3	5	223	725
Yang X ⁴¹	2014	ART	SC	--	--	--	--	48 (4.2%)	1087 (1%)	2.18 (1.62–2.94)	--	--	48	1087	1139	111264
Räisänen S ⁴³	2013	ART	No ART	--	--	--	--	91 (1.6%)	571 (0.2%)	--	--	--	91	571	5647	285357
Hayashi M ⁴⁷	2012	ART	SC	--	--	--	--	--	--	2.2 (1.68-2.87)	--	--	--	--	4570	4264
Healy DL ⁵⁰	2010	ART	No ART	--	--	--	--	174 (2.6%)	273 (1.1%)	2.34 (1.87–2.92)	--	--	174	273	6730	24619
Verlaenen H ⁵¹	1995	ART	No ART	--	--	--	--	4 (2.9%)	0 (0%)	--	--	--	4	0	140	140
Hill GA ⁵²	1990	ART	No ART	--	--	--	--	4 (6.6%)	2 (1.7%)	--	--	--	4	2	61	121

^a limited the cases with blastocyst transfer; ^b calculated by the authors. Some values listed above might be slightly different from the original values, as estimated by the authors. Abbreviations: Exp, Experimental; End, endometriosis; Previa, placenta previa; ART, assisted reproductive technology; --, not applicable; No., number; Exp Previa (%), the rate of placenta previa in the experimental group; Control Previa (%), the rate of placenta previa in the control group; Exp Previa; the number of women with placenta previa in the experimental group; Control Previa; the number of women with placenta previa in the control group; No. Exp, the number of included pregnant women in the experimental group; No. Control, the number of included pregnant women in the control group; ART End (%); the rate of endometriosis in women who conceived using ART; End ART, the rate of ART pregnancy in women with endometriosis; ART_end; women with endometriosis conceived by ART; SC_end; Spontaneous conception with endometriosis; OR, odds ratio, CI, confidence interval.

Supplemental Table S3. Metadata of studies (the effect of ART on the rate of placenta previa: sensitivity analysis).

Author	Year	Exp	Control	Exp End (%)	Control End (%)	End ART (%)	Non-End ART (%)	Exp Previa (%)	Control Previa (%)	Exp No. End	Control No. End	No. Exp	No. Control	Adjusted OR (95%CI)
Endometriosis versus Non-endometriosis (women with ART)														
Wang J ⁵	2021	ART_end	ART_non-end	74/1167 (6.0%)	--	100%	100%	8 (10.8%)	39 (3.3%)	74	1167	74	1167	--
Fujii T ³⁰	2016	ART_end	ART_non-end	92/604 (15.2%)	--	100%	100%	8 (8.7%)	4 (0.8%)	92	512	92	512	15.41 (4.40-61.7)
Benaglia L ³²	2016	ART_end	ART_non-end	--	--	100%	100%	14 (5.9%)	3 (1.3%)	239	239	239	239	--
Jacques M ³⁴	2016	ART_end	ART_non-end	160/2315 (6.9%)	--	100%	100%	3 (2.7%)	3 (2.7%)	113	113	113	113	--
Takemura Y ⁴⁵	2013	ART_end	ART_non-end	53/318 (16.7%)	--	100%	100%	9 (17%)	4 (1.5%)	53	265	53	265	--
Benaglia L ⁴⁸	2012	ART_end	ART_non-end	--	--	100%	100%	3 (3.8%)	1 (0.6%)	78	156	78	156	--
Healy DL ⁵⁰	2010	ART_end	ART_non-end	1265/6730 (18.8%)	--	100%	100%	48 (3.8%)	126 (2.3%)	--	--	1265	5465	1.65 (1.18–2.32)
ART versus SC (women with endometriosis)														
Epelboin S ⁶	2021	ART_end	SC_end	6934/38035(18.2%)	--	100%	0%	330 (4.8%)	520 (1.7%)	6934	31101	6934	31101	--
		ART_end	SC_non-end	--	--	100%	0%	330 (4.8%)	23002 (0.6%)	6934	0	6934	4083732	--
Frozen ET versus Fresh ET														
Zargar M ²	2021	Frozen	Fresh	--	--	--	--	17 (4.8%)	16 (5.1%)	--	--	356	313	--
Shinohara S ¹⁰	2020	Frozen	Fresh	--	--	--	--	2 (0.6%)	1 (0.9%)	--	--	330	112	--
Sakai Y ¹⁸	2019	Frozen	Fresh ^b	--	--	--	--	9 (15%)	3 (11.1%)	--	--	60	27 ^b	--
Ginström E ³⁵	2016	Frozen	Fresh	--	--	--	--	80 (1%)	451 (2%)	--	--	7795	22771	--
Takeshima K ³⁷	2016	Frozen	Fresh	--	--	--	--	656 (0.7%)	460 (0.9%)	--	--	90783	50445	--
Kaser DJ ³⁸	2015	Frozen	Fresh	--	--	--	--	7 (16.6%)	31 (19.8%)	--	--	42	157	--
Rombauts L ³⁹	2014	Frozen	Fresh	99/1586 (6.2%)	217 (7.4%)	--	--	33 (2.1%)	112 (3.8%)	99	217	1586	2951	--
Korosec S ⁴⁰	2014	Frozen	Fresh	43/211 (20.4%)	187 (20.4%)	--	--	0 (0%)	32 (3.5%)	43	187	211	915	--
Liu SY ⁴⁴	2013	Frozen ^a	Fresh ^a	--	--	--	--	7 (0.5%)	6 (0.3%)	--	--	1531 ^a	1914 ^a	--
Healy DL ⁵⁰	2010	Frozen	Fresh	--	--	--	--	51 (2.5%)	123 (3.0%)	--	--	2045	4058	0.73 (0.51–1.04) ^c
HRC versus NC (Frozen ET)														
Hu KL ³	2021	HRC	NC	122 (4.8%)	198 (5.2%)	--	--	14 (0.5%)	15 (0.4%)	122	198	2561	3790	0.58 (0.27–1.24) ^c
Asserhøj LL ⁴	2021	HRC	NC	16 (5.0%)	15 (2.9%)	--	--	7 (2/0%)	15 (1.9%)	16	15	357	731	1.10 (0.46–2.62)
Saito K ¹⁹	2019	HRC	NC	--	--	--	--	119 (0.5%)	66 (0.6%)	--	--	24225	10755	1.00 (0.64–1.56)
Rombauts L ³⁹	2014	HRC	NC	--	--	--	--	12 (3.4%)	21 (1.7%)	--	--	355	1231	--

^a day 3 embryo; ^b two cases were FET; ^c calculated by the author. Some values listed above might be slightly different from the original values, as estimated by the authors. Abbreviations: Exp, Experimental; End, endometriosis; Exp End, the rate of endometriosis in the experimental group; Control End, the rate of endometriosis in the control group; Exp No. End, the number of women with endometriosis in the experimental group; Control No. End, the number of women with endometriosis in the control group; No. Exp, the number of included pregnant women in the experimental group; No. Control, the number of included pregnant women in the control group; Previa, placenta previa; ART, assisted reproductive technology; --, not applicable; ET, embryo transfer; No., number; OR, odds rate; CI, confidence interval; END PAS, the study examined the effect of endometriosis on the prevalence of PAS; ART PP, the study determined the effect of ART on the prevalence of placenta previa; ART PAS, the study investigated the influence of ART on the prevalence of placenta accreta spectrum; ART_end; women with endometriosis conceived by ART; ART_non-end; women without endometriosis conceived by ART; SC_end; Spontaneous conception with endometriosis; SC_non-end; Spontaneous conception without endometriosis; HRC, hormone replacement cycle; NC, natural cycle.

Supplemental Table S4. Metadata of studies (the effect of ART on the rate of placenta accreta spectrum disorder).

Author	Year	Exp	Control	Total	Exp End	Control End	Exp PASD	Control PASD	No. Exp	No. Control	Adjusted OR (95%CI)
ART versus No ART and SC											
Wang Y ¹	2021	ART	No ART	16879728	--	--	12655 (4.7%)	325816 (2.0%)	269738	16609990	--
Wang J ⁵	2021	ART	No ART	8773	74	--	44 (3.5%)	148 (2.2%)	1241	6832	1.67 (1.16-2.41) ^a
Cochrane E ⁷	2020	ART	SC	360	--	--	3 (2.5%)	0 (0%)	120	240	--
Modest AM ⁸	2020	ART	No ART	28344	--	--	31 (2.2%)	81 (0.3%)	1418	26926	--
Salmanian B ⁹	2020	ART	No ART	37461	--	--	12 (2.1%)	218 (0.6%)	571	36890	--
Tanaka H ¹⁴	2020	ART	No ART	6952	--	--	18 (2.2%)	18 (0.3%)	811	6141	7.35 (3.20-16.6)
Kyozuka H ¹⁵	2019	ART	No ART	90554	--	--	39 (1.5%)	163 (0.2%)	2658	87896	6.78 (4.54-10.14)
Zhu L ³¹	2016	ART	SC	7923	--	--	197 (7.5%)	173 (3.3%)	2641	5282	2.37 (1.90-2.95)
Hayashi M ⁴⁷	2012	ART	SC	25069	--	--	37 (0.8%) ^a	13 (0.3%) ^a	4570	4264	--
Esh-Broder E ⁴⁹	2011	ART	SC	25193	--	--	12 (1.6%)	30 (0.1%)	752	24441	--
Frozen ET versus Fresh ET											
Sakai Y ¹⁸	2019	Frozen	Fresh	87	--	--	19 (31.7%)	2 (7.4%)	60	27 ^b	--
Takeshima K ³⁷	2016	Frozen	Fresh	141,228	--	--	321 (0.4%)	35 (0.1%)	90783	50445	--
Kaser DJ ³⁸	2015	Frozen	Fresh	199	--	--	16 (38.1%)	34 (21.7%)	42	157	3.20 (1.14-9.02)
Korosec S ⁴⁰	2014	Frozen	Fresh	1126	43	187	7 (3.3%)	29 (3.2%)	211	915	--
HRC versus NC (Frozen ET)											
Saito K ¹⁹	2019	HRC	NC	34980	--	--	142 (0.6%)	11 (0.1%)	24225	10755	6.91 (2.87-16.66)

^a calculated by the author ^b two cases were frozen. Some values listed above might be slightly different from the original values, as estimated by the authors. Abbreviations: Exp, Experimental; End, endometriosis; Exp End, number of women with endometriosis in experimental group; Control End, number of women with endometriosis in control group; Exp End, the rate of endometriosis in the experimental group; Control End, the rate of endometriosis in the control group; Exp PASD, the number of women with placenta accreta spectrum disorder in the experimental group; Control PASD, the number of women with placenta accreta spectrum disorder in the control group; No. Exp, the number of included pregnant women in the experimental group; No. Control, the number of included pregnant women in the control group; PASD, placenta accreta spectrum disorder; ART, assisted reproductive technology; SC, spontaneous conception; --, not applicable; ET, embryo transfer; No., number; HRC, hormone replacement cycle; NC, natural cycle; OR, odds ratio; CI, confidence interval.

Supplemental Table S5. Risk of bias assessment for the comparator study.

Authors	Confounding	Selection	Classification of intervention	Deviations from interventions	Missing data	Measurement of outcomes	Reported results	Overall bias
Wang Y ¹								
Zargar M ²								
Hu KL ³								
Asserhøj LL ⁴								
Wang J ⁵								
Epelboin S ⁶								
Cochrane E ⁷								
Modest AM ⁸								
Salmanian B ⁹								
Shinohara S ¹⁰								
Farella M ¹¹								
Petersen SH ¹²								
Tanaka H ¹⁴								
Kyozuka H ¹⁵								
Miura M ¹⁶								
Santi E ¹⁷								
Sakai Y ¹⁸								
Saito K ¹⁹								
Szymusik I ²⁰								
Yang P ²¹								
Nagata C ²²								
Rahu K ²³								
Shmueli A ²⁴								
Nirgianakis K ²⁵								
Sabban H ²⁶								
Li H ²⁷								
Berlac JF ²⁸								
Qin J ²⁹								
Fujii T ³⁰								
Zhu L ³¹								
Benaglia L ³²								
Jacques M ³⁴								
Ginström E ³⁵								
Valenzuela B ³⁶								
Takeshima K ³⁷								
Kaser DJ ³⁸								
Rombauts L ³⁹								
Korosec S ⁴⁰								
Yang X ⁴¹								
Räisänen S ⁴³								
Liu SY ⁴⁴								
Takemura Y ⁴⁵								

Hayashi M ⁴⁷	●	●	●	●	●	●	●	●
Benaglia L ⁴⁸	●	●	●	●	●	●	●	●
Esh-Broder E ⁴⁹	●	●	●	●	●	●	●	●
Healy DL ⁵⁰	●	●	●	●	●	●	●	●
Verlaenen H ⁵¹	●	●	●	●	●	●	●	●
Hill GA ⁵²	●	●	●	●	●	●	●	●

Updated and reproduced the data from Sci Rep. 2021;11:920 Matsuzaki S *et al.* Antenatal diagnosis of placenta accreta spectrum after in vitro fertilization-embryo transfer: a systematic review and meta-analysis / Supplemental Table S3. Risk of bias assessment for the comparator study.⁵³

Risk of bias assessment was performed using the Risk Of Bias In Non-randomized Studies–of Interventions tool (ROBINS-I).⁵⁴⁻⁵⁶

- Low risk of bias (the study is comparable to a well-performed randomized trial with regard to this domain)
- Moderate risk of bias (the study is sound for a non-randomized study with regard to this domain but cannot be considered comparable to a well-performed randomized trial)
- Serious risk of bias (the study has some important problems in this domain)
- Critical risk of bias (the study is too problematic in this domain to provide any useful evidence on the effects of intervention).
- No information on how to base a judgment on the risk of bias for this domain.

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