IVF/ICSI with preimplantation genetic screening for aneuploidy versus IVF/ICSI in couples without genetic disorders: a systematic review and meta-analysis

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Background: The benefit of preimplantation genetic screening (PGS) to improve the outcome of IVF/ICSI in women with advanced maternal age, recurrent pregnancy loss and repeated IVF failure is unclear.
Methods: We undertook a comprehensive search to identify all published and unpublished randomized controlled trials evaluating the effect of PGS for aneuploidy to increase ongoing pregnancies in advanced maternal age, repeated IVF failure and recurrent pregnancy loss in couples without genetic disorders. Two reviewers independently determined study eligibility, quality, and extracted data.
Results: Six randomized trials including a total of 1197 women met our eligibility criteria. The quality of the evidence was moderate. Meta-analyses using a random-effects model suggest that PGS has a lower rate of ongoing pregnancies (RR = 0.78, 95% CI 0.64*0.95) and a lower rate of live births (RR = 0.79, 95% CI 0.56*1.10) than standard IVF/ICSI.
Conclusions: Our systematic review uncovered moderate quality evidence suggesting that, in women with advanced maternal age, recurrent implantation failure or repeated miscarriages, IVF/ICSI with PGS for aneuploidy does not increase but instead was associated with lower rates of ongoing pregnancies and live births. The use of PGS in a non-clinical trial setting does not appear to be justified.