

COST-EFFECTIVENESS OF PRE-IMPLANTATION GENETIC TESTING FOR ANEUPLOIDIES

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Background: Preimplantation genetic testing of aneuploidies (PGT-A) at the blastocyst stage has grown in recent years. However, the utility of this technology is currently highly debated. Surprisingly, scant attention has been paid to the cost-effectiveness profile of PGT-A. **Materials and methods:** Given the current extreme variability in IVF strategies, cost-effectiveness analyses should be adapted to local situations. This proof of concept study was thought for a Center with established expertise for trophoctoderm biopsy for preimplantation genetic testing of monogenic disorders and that follows a policy of extended culture and stringent elective Single Embryo Transfer (eSET). The study compared on theoretical grounds the economical profile of two main strategies, i.e. the transfer of all available blastocysts without genetic testing (first fresh transfer and subsequent frozen-thawed transfer) and the systematic use of genetic testing (trophoctoderm biopsy, freeze all and frozen-thawed transfers of euploid blastocysts). The perspective was the one of the health provider. **Results:** The cost-effectiveness profile of PGT-A increased with female age and number of available blastocysts. This approach resulted more cost-effective in several combinations of age and number of available blastocysts. Sensitivity analyses varying the costs of embryo transfer, the costs of genetic analyses, the magnitude of the detrimental impact of PGT-A on live birth rate and the crude live birth rates slightly changed the thresholds for effectiveness but, for all of these analyses, PGT-A remains superior in several scenarios. **Conclusions:** PGT-A can be rewarding in specific settings and for particular groups of women. Cost-effectiveness considerations deserve attention in the debate regarding the clinical utility of PGT-A.