HOW WILL NEW GENETIC TECHNOLOGIES CHANGE REPRODUCTIVE DECISION-MAKING OF HIGH-RISK COUPLES? VIEWS ON NON-INVASIVE PRENATAL DIAGNOSIS AND GENE EDITING

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Abstract Body

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Running title: Views of high-risk couples on new genetic technologies

Abstract

Objective: Reproductive options for couples at high-risk of passing on a genetic condition to offspring might increase with non-invasive prenatal diagnosis (NIPD) and germline gene editing (GGE). Somatic gene editing (SGE) might also affect reproductive decision-making. This study explores if, and how, availability of these possible future technologies would influence couples' reproductive decisions.
Methods: Qualitative interviews (n=25) were conducted with high-risk couples who had received counselling for prenatal diagnosis (PND) and preimplantation genetic testing (PGT) at one Dutch Genetics Center.
Results: Couples were generally positive about NIPD as this would be safe and enables earlier testing compared to PND. Those against pregnancy termination would still prefer PGT. Increasing opportunities of having a 'healthy' embryo and less embryo-disposal were considerations in favor of GGE. Some regarded GGE as unsafe and feared slippery slope scenarios. Couples considered NIPD and GGE as options to anticipate on, provided these are safe, effective and available. SGE was least favorable since the affected child could be born and subjected to treatment.
Conclusion: NIPD and GGE were generally more positively evaluated than SGE. The results suggest a shift from PND to NIPD and parallel use of PGT and GGE. Users' perspectives should be addressed for responsible implementation.

Keywords: Genetic Diseases; Reproductive Techniques; Prenatal Diagnosis; Preimplantation Genetic Diagnosis; Qualitative Research; Interview; Couples