Knowledge, Attitudes, and Opinions of Physicians Regarding Preimplantation Genetic Diagnosis for Hereditary Cancer Predisposition Syndromes

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Approximately 5-10% of cancers are caused by an inherited predisposition. Hereditary cancers are hallmarked by early age of onset, multiple target organs, and multiple primary cancers in the same individual. Those with a hereditary cancer predisposition syndrome have a 50% risk of passing the deleterious mutation on to their offspring. Hereditary Breast and Ovarian Cancer (HBOC) and Familial Adenomatous Polyposis (FAP) are two hereditary cancer syndromes highlighted in this present study.

Preimplantation genetic diagnosis (PGD) is a technology that is used in conjunction with in vitro fertilization (IVF). Embryos can be tested for a known familial genetic mutation, including mutations that cause HBOC and FAP. Embryos that do not have the specific mutation of interest are implanted, thus drastically reducing cancer risk.

Currently, there is no standard of care regarding PGD and hereditary cancer predisposition syndromes. Therefore, the purpose of this study is to assess the knowledge, attitudes, and referral experience of physicians regarding PGD for hereditary cancer predisposition syndromes.

A total of 373 gynecologic oncologists (gyn oncs) and obstetricians/gynecologists (OB/gyns) responded to the survey. The clinicians who responded to this study had little general or specific knowledge regarding PGD and its application to hereditary cancer predisposition syndromes. Physicians were generally supportive of the use of PGD for HBOC and FAP. Although gyn oncs were more likely to care for individuals with hereditary cancer predisposition syndromes (P<0.001), they were less likely than OB/gyns to refer to PGD for the purpose of preventing a cancer predisposition syndrome in future children (P=0.004). While 49% of physicians reported that a patient had expressed concern about passing on a hereditary predisposition to cancer to future children, only 29% of physicians discussed and/or referred to PGD (P=0.002).

This survey has demonstrated the need for increased awareness of PGD for cancer predisposition syndromes. Opinions reflected in the survey population indicate clinicians may be receptive to additional education about PGD for hereditary cancer predisposition syndromes. Future research could include the impact educational intervention regarding PGD for hereditary cancer predisposition syndromes at a cancer treatment facility.