PGD AND INHERITED PREDISPOSITION CANCERS

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Preimplantation genetic diagnosis (PGD) is a technique to test human embryos created in the IVF laboratory before they are transferred to the mother's womb. Only the healthy embryos are designated as candidates to initiate a pregnancy. Historically, the main indication for PGD was to avoid having a child with a severe or lethal genetic disorder; thus PGD has allowed couples at high risk for genetic diseases to screen their test tube embryos for the presence or absence of disease genes, like single-gene disorders or congenital chromosomal abnormalities such us translocations. But genetic testing to screen for a disease that might not show up until adulthood is also possible. This is the case for inherited predisposition to many forms of cancer.

Approximately 5–10% of cancers are caused by an inherited predisposition. As before, PGD's technology allows embryos without a deleterious mutation associated with a hereditary cancer syndrome to be identified and implanted. But suitability of PGD for cancer predispositions with an onset late in individual's life is controversial both because it may be available some treatment/prevention and/or it may show reduced penetrance.

The aim of this talk is to review current data about usage of PGD to inherited predisposition of cancer syndromes. A multidisciplinary perspective will be given from physicians' attitudes (obstetrics and gynecologists, oncologists) to geneticists' role (both clinical and molecular genetics), with significant thought for ethical, psychological and genetic counseling. The legal side will be also discussed from an international point of view.