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Mini Review Article

Non-Invasive Pre Implantation Genetic Testing

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Modern reproductive technology, such as Non-Invasive Pre-Implantation Genetic Testing (NI-PGT), is utilized in assisted reproductive treatments including in vitro fertilization (IVF). It aims to examining embryos for certain genetic features or genetic problems without the need to retrieve cells using intrusive techniques, like a biopsy. Instead, NI-PGT utilizes non-invasive methods like Cell free DNA analysis, Trophoblast retrieval from cervix or uterus, and Blastocyst culture media analysis. The NI-PGT approach is an intricately planned multi-step process for identifying and choosing genetically sound embryos for implantation in assisted reproductive technologies (Leaver & Wells, 2019). It includes strict requirements for embryo selection, informed consent, ovarian stimulation, non-invasive genetic screening using cutting-edge technology, and patient selection criteria. Priority must be given to patient monitoring, data gathering, adherence to ethical standards, safety procedures, and quality control, which is followed by the reporting of results (Xu et al., 2016; Jones et al., 2021). This comprehensive strategy advances our knowledge of the efficacy and safety of NI-PGT while ensuring scientific rigor and patient safety. This study will offer several advantages like the ability to choose particular genetic traits, fewer ethical concerns compared to invasive methods, lower miscarriage rates due to the identification of chromosomal abnormalities, improved pregnancy rates through the selection of genetically healthy embryos, a reduced risk of genetic diseases, and higher patient satisfaction (Parikh et al., 2018). As this discipline evolves, it has the potential to not only increase the success rates of assisted reproductive techniques but also to allay ethical worries and give couples more control over their offspring.

Key Words: Genetic Testing, In vitro fertilization, Assisted reproductive technology.

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