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Novel method to improve *in vitro* fertilization (IVF) and intracytoplasmic sperm injection (ICSI) outcomes

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Hyaluronan is a constituent of the cumulus oophorous complex, which envelops the oocyte. It is widely acknowledged as a pivotal marker for the quality and maturity of sperm. For male factors that have a high DNA Fragmentation Index (DFI), those having *in vitro* fertilization (IVF) or Intracytoplasmic sperm injection (ICSI), those who have repeated miscarriages because of male factors, and those who lose their pregnancies early because of male factors. The current study's robust result demonstrates the effectiveness of the HA (Physiological intracytoplasmic sperm injection (PICSII)) selection system. Based on available and historical data, we can surmise that sperm chosen using the HA technique prior to ICSI offer a higher predictive value for developing viable embryos, thereby aiding in the optimization of treatment outcomes. The HA binding method for sperm selection can be used in routine laboratory settings to boost conception rates and lower the risk of genetic issues by inexpensively

replicating a physiologic choice of the male gamete. Clinic abortion rates have been successfully lowered by 50% with the use of this procedure for patients with oligo-asthenoteratozoospermia and for couples who experienced consecutive implantation failures. The primary outcomes of this research are an increase in the quantity of blastocysts extracted each cycle, the quantity of Grade A embryos, the rate of cleavage, the quality of the embryos, the rate of implantation, and ideally the rate of pregnancy. It can be inferred that sperm selected using the HA approach before ICSI had a better chance of becoming viable embryos. The employment of HA (PICSII) media techniques in ICSI led to higher rates of fertilization and pregnancy because they help to minimize sperm with aberrant morphological flaws and promote motility, notably progressive motility. This study's recommendation is to use hyaluronan when selecting spermatozoa to produce high-quality embryos with high pregnancy rates.

Biography

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