



The Clinical Treatment of Semen Optimization and *Vitro* Culture of Sperm for Patients with Oligozoos-Permia at High Altitude Area

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Editorial

Our recent research work, including two directions (semen optimization and *vitro* culture of sperm), focuses on clinical treatment of patients with oligozoos-permia at high altitude area.

Semen optimization

Clinical indications: Semen optimization is a promising new technology designed to improve successful pregnancy through the use of screening to identify high quality sperm.

Principle and method: The principle is collecting and freezing active sperms across multiple time points, then recovering sperms for ART, in order to increase the pregnancy rate.

The technology involves three steps. One step is screening active sperm from patients with oligospermia and asthenospermia, using discontinuous density gradient centrifugation in order to prevent sperm from impurity interferences. The second step is freezing the sperms with sperm protecting agent, using liquid nitrogen fumigation frozen. The third step is collecting high-quality the active sperms.

Current clinical efficacy: ART has become the preferred method for managing various causes of male infertility. Practice in our center has indicated that multiple sperm optimizations could improve the number of good quality sperms and increase the fertilization rate of patients with male infertility at high altitude.

Vitro culture of sperm

In recent years, we want to investigate the clinical feasibility, safety and efficacy of *in vitro* culture of sperm for assisted reproductive pregnancy in high altitude areas [1-5].

The core is the difficulty of the producing the replacement fluid of seminal plasma, which must have a suitable pH and enough nutrients and proteins to keep sperm active.

Our research works have just started and need to collect more experimental data to improve formula of the replacement fluid.

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