

9th Yazd International Congress and Student Award on Reproductive Medicine with 4th Congress of Reproductive Genetics

Key Lectures

K-41

Regenerative medicine for female reproductive system

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Tissue engineering and regenerative medicine make a bright future for the regeneration, repair, and replacement of various tissues and organs. In the reproductive system, most of the major acquired or congenital organ failures lead to a great functional problem, infertility. Everybody with infertility will have great social and family obstacles, often with psychological consequences for the couples.

Regenerating the absent organ or repairing and replacing the diseased tissue are the novel choices for the treatment of reproductive system diseases due to organ or tissue failure. By tissue engineering for female patients, that is using the triad of potent cells, scaffolds and growth factors could make an artificial uterus, tubal organs, ovary, and follicles. Selection of the best cells, scaffolds, and stimulation factors to make a functional tissue is the aim of many research programs around the world. Various types of stem cells, organic and inorganic biocompatible scaffolds, and different types of proteins, enzymes, and small molecules as stimulators have been used. Engineered tissues could apply as the in vitro research models and for clinical use to restore reproductive function.

Taken together, this medical technology prepares the introductory facilities for germ cell support and in vitro fetal growth and complete artificial uterus for ex vivo embryo growth and maturation (biobag). For all the possible instances, religious beliefs, law and reproductive health ethics should be considered.