

5th International Conference on

Tissue Engineering & Regenerative Medicine

September 12-14, 2016 Berlin, Germany

**Bertha Chen**

Stanford University, USA

The role of regenerative medicine in obstetrics and gynecology

Stem cell research and regenerative medicine are integral to the field of Obstetrics and Gynecology. With the explosion of technologies directed at treatments for infertility, there is a critical need to understand properties of pluripotency and how it relates to embryo development. Evidence of cancer stem cells will drive new discoveries in the treatment of gynecologic malignancies such as ovarian and endometrial cancers. Notably, there is great interest in regeneration of aged or damaged tissues specific to the female anatomy and lower urinary tract via stem cell based technologies. In humans, damaged tissues are generally replaced by continuous recruitment and differentiation from stem cells in the body. However, the body's ability for regeneration is reduced with aging. Examples of conditions in need of regenerative therapies are urinary and fecal incontinence resulting from sphincter deficiency and pelvic organ prolapse. These conditions are prevalent in older women and greatly affect quality of life and represent colossal health costs. Current approaches for tissue regeneration include transplantation of adult mesenchymal cells or their derivatives and implantation of engineered scaffolds seeded with these cells. Induced pluripotent stem cells are a promising source of autologous cells. Because of their property of self-renewal, large amounts of cells can be produced for transplantation. Furthermore, their pluripotent state allows for derivation of multiple cell types thus facilitating implementation in a stepwise fashion from simple cell injections to more elaborate matrices with multiple cell types that have potential for full regeneration. Here, we discuss stem cell based approaches for tissue regeneration in obstetrics and gynecology.

Biography

Bertha Chen has completed her Bachelor of Science degree in Chemical Engineering from the University of California, Berkeley and Doctorate of Medicine from Stanford University School of Medicine. She is a Professor of Ob/Gyn and Urology (by courtesy) at Stanford University School of Medicine and Co-Chief of the Division of Urogynecology and Pelvic Reconstructive Surgery. Her research focus is in stem cell pluripotency, mesenchymal differentiation and stem cell based therapy for urinary incontinence. She has published more than 55 papers in reputed journals.

bchen@stanford.edu