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CELL & STEM CELL RESEARCH

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Optimizing regenerative medicine therapies for differing patient populations

Regenerative Medicine offers the promise of an unlimited amount of tissue and organ repair and replacement. Great progress has been made in preclinical studies and many applications are now in the clinical stage. Regenerative Medicine is beginning to explore the potential effects of efficacy in different patient populations. The risk urinary incontinence in women is age and obesity related, and is a chronic disease influenced by the sex hormone milieu. It is well known that aging and diabetes reduce the ability of tissue to regenerate. It also stands to reason that these changes may also influence the efficacy of Regenerative Medicine approaches to urinary incontinence. In fact, this may explain, in part, why cell therapies for urinary incontinence are so successful in preclinical studies (which historically use younger health animals with acute UI). In contrast, the results of clinical studies in older women with varying body weights, sex hormone status and chronicity of disease. This presentation will first review select studies identifying the effects of age, gender and hormone status on the ability of cells to stimulate regeneration of tissues. The majority of this presentation will introduce a female nonhuman primate (NHP) model of induce intrinsic urinary sphincter deficiency (ISD) and then present results of several studies describing the effects of skeletal muscle precursor cell (skMPC) treatment in acute vs. chronic fibrotic ISD; older and younger NHPs and in NHPs with stress-induced dysmenorrhea. The presentation will close with the results of recent studies identifying the use of chemokines on sphincter regeneration in this animal model.

Biography

J Koudy Williams is a DVM with over 35 years of experience in performing translational research using different animal models of human disease. He has published over 120 full length manuscripts and 20 chapters and reviews. His focus is on women's health and recently on Regenerative Medicine approaches to restoration of the urinary sphincter for women with urinary incontinence.

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