

TISSUE ENGINEERING AND BIOBANKING

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TISSUE SCIENCE AND REGENERATIVE MEDICINE

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Inflammatory diseases, postsurgical tissue adhesion complications, current practices and novel emerging targeted therapies

Tissue adhesion occurs following mechanical trauma or extensive inflammatory tissue injuries. Tissue adhesions remain as significant clinical challenges affecting millions of patients each year. Subsequent abdominal surgeries and wound healing, patients may be challenged with formation of postsurgical tissue adhesion (PSTA) complications as consequences of tissue repair. Approximately, 65-97% of patients suffer from some types of PSTAs, when an organ surface is damaged due to inadvertent desiccation or trauma. During healing, tissues may firmly attach to the adjacent surfaces by the formation of fibrous scars. The mechanism of PSTA formation is similar to wound healing and response to implants. PSTAs can be asymptomatic or followed by complications comprise of abdominal or pelvic pain, intestinal obstructions and infertility. Further, these adhesions form complex tissue barriers making subsequent surgical interventions costly and increasingly difficult, if not life threatening. In addition to severe negative impact on quality of life, the annual financial expenditure related to PSTA exceeds \$1.3 billion. Therefore, effective strategies for preventing PSTA formation remain significant clinical challenges. In this keynote presentation, the PSTA formations and consequences will be discussed in patients, following in vitro and in vivo models and the current therapeutic practices and their short comes. In addition, new and emerging strategies to speed wound healing such as utilization of fibrin-targeted PSTA prevention material (e.g. fibrin gel matrix) and nanocomposite-based, biodegradable tissue adhesives will be scrutinized in protecting against adhesion formations without interfering in tissue wound healing process or causing further complications.

Biography

Helieh S Oz is an active Member of American Association of Gastroenterology (AGA) and AGA Fellow (AGAF). She is an Immuno-Microbiologist/Pathologist with expertise in inflammatory, infectious diseases, signal transduction, pathogenesis, innate/mucosal immunity, micronutrient and drug discovery. She has a DVM, MS (U. IL), PhD (U. MN) and clinical translational research certificate (U. KY Med Center). She has over 90 publications in the areas of chronic inflammatory disorders (pancreatitis, hepatitis, colitis and periodontitis), microbial and infectious diseases, signaling pathways and tissue repair. She served as Lead Editor for special issues such as Gut Inflammatory, Infectious Diseases and Nutrition (*Mediators of Inflammation 2017*); Nutrients, Infectious and Inflammatory Diseases (*Nutrients 2017*); Gastrointestinal Inflammation and Repair: Role of Microbiome, Infection, Nutrition (*Gastroenterology Research Practice 2016*), and Co-Editor for Parasitic Infections in Pediatric Clinical Practice (*J Pediatric Infectious Disease 2016*) and "Chagas Disease" Book, Intech Open Science 2017. She serves as member of different Editorial Advisory Board Committees including Center of Excellence for Medical Research and Innovative Products, Walailak University and is an avid reviewer for several peer-reviewed journals.

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