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Challenges for successful translation of cell therapy

There are great expectations for cell therapy in the 21st century. The optimists in the field view cells as mini biological factories capable of producing therapeutic effects through a wide variety of different mechanisms and interactions. However the reality is that the complexity of the therapy and intricacy of the science have hindered progress. Modern cell therapy began in 1956 when the first bone marrow transplant was performed using hematopoietic stem cells (HSC), a type of adult stem cell. HSC transplantation has progressed and is used in thousands of patients every year. In the past two decades interest in cell therapy has exploded, although there are still only a few commercially available products. This broad field now includes a wide variety of cell types, including adult stem cells and mature, differentiated cells intended for a range of clinical indications. Disease indications have included cancer, cardiovascular, Parkinson's disease, brain/spinal cord injury, stroke, diabetes, wounds, burns, metabolic disease and cosmetic applications. In the past decade there has been tremendous progress in embryonic stem cells and, most recently, induced pluripotent stem cells. These technologies have great potential but are fraught with ethical and technical hurdles. In addition, there is no widespread cellular therapy medical tourism, and many practitioners in this area are utilizing unethical and possibly unsafe "therapies", taking advantage of desperate patients and families. This presentation will describe some of the current investigational and commercialized cell therapies, and will explore some of the barriers that have hampered development of this promising field.

Biography

Kurt is the current President of the International Society for Cellular Therapy. He attended Stanford University and the University of Kansas School of Medicine. He completed medical residencies at the University of Kansas and Johns Hopkins. He is board certified in anatomic pathology, clinical pathology, blood banking and transfusion medicine. He completed an immunology fellowship at the US National Institutes of Health. His work experience has included the FDA as a Medical Officer in the Center for Biologics, Deputy Director of the FDA Division of Cell and Gene Therapy, Assistant Professor at Children's National Medical Center in Washington DC and several leadership positions in private industry (including Transkaryotic and ViaCell). At ViaCell he was Medical Director of the Viacord Cord Blood Bank. He is currently VP for Clinical Development at Hospira Inc. He is an active member of several other societies active in cell therapy and regenerative medicine including AABB, International Society for Stem Cell Research (Commercial Committee), American Society of Hematology, American Society for Blood and Marrow Transplantation, and the FDA Cell, Tissue and Gene Therapy Advisory Committee (3-year term as Industry Representative).

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