OMICSCIOUP^{2nd} World Congress on <u>C o n f e r e n c e s</u> Accelerating Scientific Discovery Cell Science & Stem Cell Research

November 12-14, 2012 Hilton San Antonio Airport, USA

Cell therapy for perinatal brain injury from hypoxia-ischemia and prematurity

Irina Burd Johns Hopkins University School of Medicine, USA

Perinatal brain injury remains a major cause of cerebral palsy and other adverse neurological outcomes. Although therapeutic hypothermia is now established to improve recovery from hypoxia-ischemia (HI) at term, many infants continue to survive with disability, and hypothermia has not yet been tested in preterm infants. Novel data indicates that the mechanisms of brain injury from hypoxia-ischemia and injury from exposure to intrauterine inflammation (as in cases of preterm birth) may follow converging mechanisms. There is increasing evidence from *in vitro* and *in vivo* trials that stem cells may have multiple beneficial effects on outcome after hypoxic-ischemic injury. Stem cell therapies have shown great promise in animal studies in decreasing neurological impairment. Although the mechanisms of action of stem cells, the optimal type, dose, and method of administration remain surprisingly unclear, cell based interventions after completion of the majority of secondary cell death appear to have potential to improve functional outcome for neonates after HI. Evaluation and understanding of mechanisms that lead to the improvement of perinatal brain injury and consideration cell therapy use for the inflammation-induced perinatal brain injury, as in cases of preterm birth, are our main goals to bring cell therapy from bench to bedside

Biography

Irina Burd, MD, PhD is an Assistant Professor of Obstetrics and Gynecology and Neurology in the Division of Maternal Fetal Medicine at the Johns Hopkins University. She was recruited to the Johns Hopkins University to spearhead the development of the field of Fetal Medicine and Fetal Neurology and is the founder of the Johns Hopkins Integrated Research Center for Fetal Medicine. Dr. Burd earned Bachelor of Arts Degree from Rutgers University (Summa Cum Laude) and completed the MD/PhD program at the University of Medicine and Dentistry – Robert Wood Johnson Medical School. She completed her residency in Obstetrics and Gynecology at the Thomas Jefferson University and her fellowship in Maternal Fetal Medicine at the University of Pennsylvania (PENN). Dr. Burd developed a research program studying the pathogenesis of fetal brain injury with exposure to intrauterine inflammation and studies prenatally used neuroprotective agents that could be used *in utero* to prevent cerebral palsy and a spectrum of neurobehavioral outcomes. She is the recipient of numerous honors, including the Ikaria Research Award from the Perinatal Research Society, a research award from the American Board of Obstetrics and Gynecology/American Association of Gynecology and Obstetrics Foundation (ABOG/AAOGF), the Thomas Bogg's Award from the Philadelphia Perinatal Society and Passano Foundation Clinician Scientist Award. Dr. Burd's work highlights the importance of utilization of "prenatal window" to make stronger and healthier children

iburd@jhmi.edu