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Alterations in Histone Acetylation and Neuroinflammation in Diabetic Painful Neuropathy

Dr. Munmun Chattopadhyay is an Assistant Professor at TTUHSC El Paso, TX, USA. Her research is focused on determining the impact of inflammatory mediators on the pathogenesis of diabetic complications: neuropathy, cardiomyopathy and gastroparesis. Her lab established that replication defective herpes simplex virus-mediated gene transfer of growth factors (NGF, NT-3, VEGF) can prevent diabetic and drug-induced peripheral sensory neuropathy in animals, and that gene transfer mediated release of inhibitory neurotransmitters (Enkephalin, GABA) as well as anti-inflammatory mediators (IL-10, sTNFR) in diabetic animals would reduce pain concomitantly with a reduction in sodium channel NaV1.7 levels in dorsal root ganglia. Her lab also demonstrated exercise-mediated alleviation of painful neuropathy with a decrease in neuro-inflammation. Currently, the lab is investigating the novel early biomarkers of inflammation and epigenetic modulators (histone modifications) involved in the progression of neuropathy, cardiac dysfunction and gastroparesis in diabetic animals and human subjects, and are exploring whether inhibiting inflammation or epigenetic changes will alter the progression of these complications. Dr. Chattopadhyay has been funded by NSF, ADA and other foundations, published more than 35 articles and serves as an editorial board member in peer reviewed journals and panel member in grant review committees.