Weekly Colloquium
Tuesday, 04/26/2016, 12:30pm, Billings Building – Rosedale Conference Room

“Can targeting early metabolic alterations provide neuroprotection in developmental brain injury?”

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Research Summary
Metabolism is crucial to provide energy for cellular processes essential for normal brain development. Our recent studies focus on determining metabolic alterations after neonatal hypoxia-ischemia (H/I) and pediatric traumatic brain injury (TBI) that contribute to secondary energy failure after acute injury and lead to long-term dysfunction. We use 13C-NMR spectroscopy to determine alterations in cell specific pathways of metabolism in neurons and astrocytes after injury. Pediatric brain injury leads to delayed and/or impaired glucose metabolism and neurotransmitter synthesis in both ipsilateral and contralateral sides of brain after injury. We have found some differential responses to injury in male and female rat pups. Recent studies have focused on determining the efficacy of the endogenous compound/dietary supplement acetyl-L-carnitine (ALCAR) in providing acute and long-term neuroprotection. Treatment with ALCAR after injury decreases lesion size, protects mitochondrial function and improves motor skills and memory in rat models of H/I and TBI.

Recent publications:


Other manuscripts:

