Society for Neuro-Oncology: 12th Annual Scientific Meeting and Education Day

The 2007 Society for Neuro-Oncology Scientific Meeting took place at the Gaylord Texan Resort in Dallas, Texas on November 15th-18th 2007. Over 900 scientists attended the meeting. Four hundred ninety abstracts focused on pediatric brain tumors, angiogenesis, blood-brain barrier, medulloblastoma, meningioma, management of primary and metastatic tumors, oligodendrogliomas, novel clinical trial design, brain tumor models, immunology/immunotherapy, epidemiology and quality of life. All the abstracts of the meeting can be found in the link of the Society for Neuro-Oncology: http://www.soc-neuro-onc.org/

Three excellent keynote presentations included Dr. Ian Pollack (Children’s Hospital of Pittsburg) who presented data on pediatric gliomas, Dr. Charles Stiles (Dana Farber Cancer Institute) who presented the role of olig transcription factors in stem cell biology and brain tumor development and Dr. Paul Mischel (University of California) described the use of genome analysis tools on identifying signaling pathways involved in brain tumors.

In one of the sunrise sessions, three outstanding scientists: Dr. Perry (Washington University School of Medicine), Dr. Gutmann (Washington University School of Medicine) and Dr. Giovannini (House Ear Institute) presented animal models for NF2- and non NF2- related meningiomas.

A number of poster presentations include data primarily in NF2:

**Katherine Striedinger** proposed that merlin could exert its tumor suppressor activity through the mammalian homolog of hippo pathway in humans. They showed that in the presence of NF2, YAP a translational activator and the effector protein of the hippo pathway is inactive. The absence of merlin correlated with activation of YAP resulting in activation of genes involved in suppression of apoptosis and increased proliferation.

*Katharine Striedinger,¹ David Gutmann,² and Anita Lal¹; ¹University of California, San Francisco, San Francisco, CA, USA; ²Washington University in St. Louis, St. Louis, MO, USA*

**S. Sean Hushmandi** showed that by using Nf2-deficient astrocytes, merlin regulates growth and motility through the activation of the src oncoprotein. They also showed that merlin regulates src in a receptor tyrosine-dependent manner which leads to control cell growth and motility. The elucidation of the role of NF2 tumorigenesis will be beneficial for identification of new therapeutic targets.

*S. Sean Hushmandi, Ryan J. Emnett, and David H. Gutmann; Neurology, Washington University in St. Louis, St. Louis, MO, USA*
A number of clinics identified the pathologic records of 100 patients diagnosed with NF1. Overall the tumors were hemispheric (35%), optic pathways (24%), brainstem (16%) cerebellum (9%), intraventricular (6%), spinal cord (5%) and tectum (2%). Histological types were primarily pilocytic astrocytomas (51%) followed by diffusely infiltrating astrocytomas (27%) and undetermined astrocytomas (19%). The authors concluded that careful histologic classification and grading should be applied to provide accurate diagnosis as well as guidance to appropriate therapy for individuals with NF1-related gliomas.

Fausto Rodriguez, Arie Perry, David Gutmann, Brian O’Neill, Jeffrey Leonard, Sandra Bryant, and Caterina Giannini; Laboratory Medicine and Pathology, Mayo Clinic College of Medicine, Rochester, MN, USA; Division of Neuropathology, Washington University in St. Louis, MO, USA; Washington University in St. Louis, St. Louis, MO, USA; Neurology, Mayo Clinic College of Medicine, Rochester, MN, USA; Neurosurgery, Washington University in St. Louis, MO, USA; Biostatistics, Mayo Clinic College of Medicine, MN, USA.

Stacey Wentworth et al presented the effect of radiation therapy (RT) on sixteen NF patients (6 NF1 and 12 NF2) who were treated with RT from 1986-2006. Overall survival at 5 years for all patients was 94%. Five-year progression-free survival was 100% for acoustic neuromas, 75% for ependymomas, 100% for low grade gliomas, 86% for meningiomas and 100% for non acoustic schwannomas. They concluded that patients with NF-associated CNS tumors present a unique management dilemma: the toxicity of the therapy must be balanced with the morbidity of the progressive disease. RT provides an effective method of tumor control for most NF-associated CNS malignancies and should be considered.

Stacy Wentworth, Thomas Ellis, Steven Glazier, Kevin McMullen, Volker Stieber, Stephen Tatter, and Edward Shaw; Wake Forest University, Winston-Salem, NC, USA; Neurosurgery, Wake Forest University, Winston-Salem, NC, USA.

Melva Pinn et al presented a retrospective study of ten NF2 patients who had twenty acoustic neuromas. Management of the twenty acoustic neuromas was observation in 6 (1 of whom had surgery at progression, 1 fractionated external beam radiation at progression), stereotactic radiosurgery (SRS) in 10, and surgery in 4 (2 with subsequent GK SRS at recurrence). In conclusion NF2 patients compared to non-NF2 patients treated with SRS for acoustic neuromas, NF2 patients have larger tumors, a lower likelihood of useful hearing pre- and post-SRS, a higher incidence of facial weakness, and a high degree of local control. The authors suggest that earlier treatment with lower dose SRS (e.g., 10 Gy) when the acoustic neuromas are smaller and when useful hearing is present may reduce the toxicity of treatment.

Melva Pinn, J. Daniel Bourland, Thomas Ellis, Allan Deguzman, Kenneth Ekstrand, Kevin cMullen, Steven Glazier, Michael Munley, Doug Powell, Volker Stieber, Peter Rossi, Stephen Tatter, Stacy Wentworth, and Edward Shaw; Radiation Oncology, Wake Forest University School of Medicine, Winston-Salem, NC, USA; Neurosurgery, Wake Forest University School of Medicine, Winston-Salem, NC, USA; Internal Medicine, Madigan Army Medical Center, Tacoma, WA, USA; Wake Forest University School of Medicine, Winston-Salem, NC, USA; Radiation Oncology, Emory Clinic, Atlanta, GA, USA.