

North American Gamma Knife Consortium



STEREOTACTIC RADIOSURGERY RESEARCH, EDUCATION AND PUBLISHING FOR THE PURPOSE OF IMPROVING PUBLIC HEALTH

FALL 2012

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NAGKC News Update: Message from the Chairman

The North American Gamma Knife Consortium continues to grow with the addition of new members from the University of Toronto and pending applications from Robert Wood Johnson in New Jersey, and Dr. Peter Rossi from St. Joseph's Hospital-Emory Healthcare in Atlanta. The Consortium is designed to facilitate both retrospective clinical outcomes studies related to the use of the Leksell Gamma Knife and to stimulate the development of prospective clinical trials for important indications. The Consortium was founded in 2008 and is currently centered in Pittsburgh as the coordinating institution. Current participating sites are included below.

University of Pittsburgh Center for Image-Guided Neurosurgery
University of Virginia Radiosurgery Center
Mayo Clinic, Rochester MN
Cleveland Clinic Foundation
Hoag Memorial Hospital Gamma Knife Center
NorthShore University HealthSystem
Washington Hospital Healthcare System
Health Sciences Centre Winnipeg
Centre Hospitalier Universitaire de Sherbrooke
Barrow Neurological Institute
University of Kentucky Neuroscience Institute
NYU Langone Medical Center
Yale New Haven Gamma Knife Center
University of Pennsylvania Gamma Knife Center
University of California, San Francisco Gamma Knife Program
Northwestern Memorial Hospital Gamma Knife Radiosurgery Center
Puerto Rico Medical Services Administration Medical Center
University of Toronto
St. Joseph's Hospital-Emory Healthcare in Atlanta

The NAGKC continues to foster analysis and publication of outcome studies related to both rare as well as more common clinical uses of the Leksell Gamma knife. The consortium has provided the infrastructure necessary to perform a multicenter review of results related to chordoma (*Neurosurgery* 68 number 2: 379-389, February 2011) and a second study related to cluster headache (*J. Neurosurgery* pages 1-8 April 30, 2010]. The retrospective outcome analysis of glomus tumors, primary authored by Jason Sheehan, has now been published in the (*J Neurosurgery* 117:246-254, 2012). A study on nonsecretory pituitary adenomas, also first authored by Jason Sheehan, is currently pending submission. Data collection is continuing related to craniopharyngioma under the direction of Dr. Niranjana and Dr. Kano. A multicenter retrospective study on chondrosarcoma is underway.

Members of the Consortium are asked to define a particular clinical problem and to develop a de-identified patient spreadsheet (based on individual center retrospective chart reviews) containing all necessary data. We encourage members of the Consortium to continue to think about particular clinical indications, especially rare problems, where pooled data may be able to provide a much stronger study of outcomes related to stereotactic radiosurgery.

Regular Meetings of the Consortium

The North American Gamma Knife Consortium has regularly scheduled meetings of the board and attended by representatives of participating sites, usually in conjunction with major national or international meetings. The meetings are organized under the direction of Dade Lunsford and Doug Kondziolka and assisted by the administrative team of Rebecca Shapiro and Sharon DeCesare. Mr. Paul Stanick updates and maintains the NAGKC website (www.nagkc.pitt.edu). Copies of the current membership as well as bylaws are available on the website. Dr. Jason Sheehan, secretary/treasurer of NAGKC, has provided regular minutes for review which are also posted on the website. Each center nominates a single individual to serve on the governing board of the consortium, once full membership is obtained. Full membership is dependent on participation in both retrospective and clinical trials. Submission of case material for approved studies is an important part of continuing membership.

Sites that are interested in potential membership should contact Ms. Sharon DeCesare (decesares@upmc.edu) or Ms. Becky Shapiro (shapirorb@upmc.edu) via email.

Meetings of the NAGKC will be held in conjunction with future meetings. The next working board meeting will be held in conjunction with the next AANS meeting (April 28-May 01, 2013) in New Orleans, Louisiana. Members will also have an opportunity to meet on June 16, 2013, shortly before the Biennial International Stereotactic Radiosurgical Society meeting in Toronto.

Members and prospective sites are invited to correspond with questions relative to the NAGKC. Such questions can be addressed to Dade Lunsford or Sharon DeCesare at the following address at the University of Pittsburgh Medical Center:

NAGKC
Department of Neurological Surgery
UPMC PUH-B-400
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Prospective Clinical Trials

The NAGKC is pleased to announce the funding of two proposed clinical trials are related to multiple brain metastases. Via a contract for three years of funding from AB Elekta, the NAGKC will fund two clinical trials proposed by Dr. Igor Barani of UCSF. NAGKC 12-01 is a prospective clinical trial done to evaluate stereotactic radiosurgery for five or more brain metastases in comparison to whole brain radiation therapy. The primary end points are neurocognitive status as well as tumor response. The second clinical trial (NAGKC 12-02) will be a companion clinical validation trial to evaluate the on line neurocognitive methodology. It is hoped that both clinical trials will open in October 2012. In addition to UCSF which will serve as the primary site and Dr. Barani as PI, 6 other NAGKC sites have confirmed their willingness to participate. Accrual is designed to take 2 years. The practice of radiosurgery has continued to evolve with more and more centers and more and more patients with multiple brain metastases undergoing stereotactic radiosurgery. Preservation of neurocognitive function as well as brain-tumor control are important goals of radiosurgery, and this clinical trial will evaluate a novel neurocognitive online assessment tool.

A third prospective Phase 1 / 2 clinical trial (NAGKC 12-03) will evaluate the usage of stereotactic Gamma Knife radiosurgery as a boost to the tumor bed border zone in conjunction with the usage of bevacizumab. This clinical trial will be supported in part by Genentech, with additional funding provided by the NAGKC itself. AB Elekta has agreed in principle to provide sufficient additional funding to the NAGKC to complete this trial. Dr. Ajay Niranjani at the University of Pittsburgh will serve as PI. Accrual of 40 patients over the course of 18 months at up to five participating centers is desired. We hope to start this trial by December of 2012. The primary outcome variable is overall survival at six months. Overall survival from the time of diagnosis will also be assessed. Studies to date have not shown significant improvement in overall survival in patients where the target volume for radiosurgery is limited to the contrast-enhancing portion of the tumor. The hypothesis of this study is that glioblastomas progress in the adjacent border zone at the site of the cytoreductive surgical cavity. The radiosurgical target volume will be determined by the T2 volume

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up to 1 cm beyond the contrast enhancing volume. Selected centers may be able to coregister MRS data at the time of treatment. All participating patients will undergo boost radiosurgery after they have confirmed progression following initial diagnosis, radiation therapy, and temozolamide management. Patients will be treated with bevacizumab 10 mg/kg one day prior to radiosurgery. Day 14 onwards the patients will be treated with 21-day cycle of bevacizumab (15 mg/kg) until progression.

Secretary/Treasurer Report

The secretary/treasurer's report indicates that the NAGKC maintains a satisfactory fund balance at the present time, based on initial membership fees and annual dues of \$2000.00 from each participating site. Participating sites in conjunction with the bylaws are required to supply cases for ongoing retrospective or prospective clinical trials. The administrative infrastructure of the NAGKC consists of the part-time assistance of Rebecca Shapiro, Sharon DeCesare (who handles regulatory affairs and serves as an honest broker), and Paul Stanick who helps to organize the NAGKC website.

Spotlight: University of Virginia's Stereotactic Radiosurgery Program

The University of Virginia's Stereotactic Radiosurgery Program was started by Neal Kassell and Ladislau Steiner. In 1989, the University installed a Gamma Knife model U in Charlottesville, Virginia. In the ensuing years, more than 10,000 patients have been treated with stereotactic radiosurgery at the University of Virginia. The program has installed state of the art radiosurgical technology at the University of Virginia Medical Center and expanded its reach to include centers in Newport News, Fredericksburg, and Winchester, Virginia.

Over the years, the program has placed priority on patient care, medical education, and outcomes research. The Gamma Knife center has drawn patients from 54 countries throughout the world and every state in the U.S. The clinicians have published more than 200 peer reviewed reports. They have also hosted numerous fellows, educational conferences, and training programs including the first American Association of Neurological Surgeons Stereotactic Radiosurgery Course for Residents in 2009. The staff of the University of Virginia's Stereotactic Radiosurgery Program includes:

Jason Sheehan (neurological surgery)	James Larner (radiation oncology)
Paul Read (radiation oncology)	David Schlesinger (medical physics)
Tyvin Rich (radiation oncology)	Zhiyuan Xu (neurological surgery)
Alan Aqualino (medical physics)	Prashant Raghavan (neuroradiology)
Avery Evans (interventional neuroradiology)	Gregory Patterson (chief of nursing)
Francis Taylor (radiation therapy)	



The University of Virginia's Stereotactic Radiosurgery staff and their families.

