Successful Scholar

Control with research

Simon Liubinas is working to reduce side-effects for brain tumour patients with seizures.

A unique collaboration between the departments of surgery, medicine and radiology at the Royal Melbourne Hospital (RMH) is helping surgeons and scientists to understand the molecular mechanisms of tumour associated epilepsy (TAE) in patients with supratentorial gliomas.

Participating in that collaboration is Dr Simon Liubinas, a recipient of the Foundation for Surgery Scholarship in 2011 and 2012 and who is now in his final year of his PhD.

Dr Liubinas said that gliomas were the most common malignant brain tumours in Australia with more than 1500 cases diagnosed each year, and that generalised or partial seizures present a feature in up to 80 per cent of low-grade tumours and 50 per cent overall.

He said that while anti-epileptic drugs were now used to help control such seizures, they did not always work while side effects from conventional anti-epilepsy drugs are the most common malignant tumour.

He said that he was also involved in research to see if such MRS testing of glutamate could predict overall survival in glioma patients.

“The ability to non-invasively measure glutamate in the tumour and peritumoural brain already exists and if we demonstrate changes between those patients who are at high risk versus low risk of developing epilepsy then there’s no reason why it couldn’t be used in clinical practice in the very near future,” he said.

Unfortunately, gliomas can never be totally excised surgically so the goal of any research in this field is to find a way to slow or decrease their growth.

“Now we are looking into various mechanisms via which glutamate acts on the tumour and peritumoural brain and while our research is focused on TAE, any research into gliomas may help with the overall goal of slowing, stopping tumour growth and may even eventually impact on future treatments for epilepsy,” Dr Liubinas said.

He said that he was undertaking his PhD under the supervision of Professor Andrew Kaye, Professor Terrence O’Brien, Dr Andrew Monkooff, Associate Professor Kate Drummond and Dr Bradford Moffat.

He said he first became interested in the field when working as a surgical resident at the Royal Melbourne Hospital and later at an unaccredited neurosurgical registrar working under Professor Kaye, Head of the Department of Surgery at RMH and University of Melbourne.

He said that he was particularly pleased to be invited to participate as a PhD student because of the collaborative nature of the research.

“This is a unique example of such a collaboration between departments,” he said.

“My role as a part-time unaccredited registrar in the department of neurosurgery at RMH gives me access to patients with brain tumours.

“I am then able to conduct a clinical interview regarding their seizure history and then arrange for them to have an MRI scan in the department of radiology, scans which are then examined for glutamate in the Melbourne Brain Centre at RMH.

“I am also able to go to theatre and obtain fresh samples of brain tumour which are incredibly precious from a scientific perspective and literally take them straight from theatre to the laboratory in either the department of surgery or medicine.

“We also hold weekly TAE meetings with neurosurgeons, neurologists, radiologists, laboratory scientists and PhD students making it a wonderful example of bedside to bench collaborative research.”

For the future

Upon completion of his PhD and the research component of the training program, Dr Liubinas will next year begin his formal SET1 neurosurgery training, an area of surgery and science that has long held a fascination.

“Every day I am amazed at the surgery that the RMH consultants can perform and the incredible detail of MRI scans that can show the structure and functioning of the brain,” he said.

“I feel this is a hugely exciting time to be starting a career as a neurosurgeon.

“It’s very humbling to work for such dedicated clinicians and researchers and I am truly grateful to the academic neurosurgery training which will be of great benefit in my future career and hopefully for my future patients.”

With Karen Murphy

Scholarships and Awards

2012: Professorial Research Award: The University of Melbourne, Department of Surgery (The Royal Melbourne Hospital).

2012: National Health and Medical Research Council Postgraduate Scholarship.


2010: Melville Hughes Scholarship: The University of Melbourne.

A preliminary study of seven patients with gliomas demonstrated that peritumoural glutamate levels, as measured by MRS, are higher in TAE positive patients than in TAE negative patients.

Dr Liubinas said his work was particularly aimed at determining whether such non-invasive testing could allow glutamate levels to act as a biomarker for TAE which could then allow for the design of tailored therapy to reduce the use of, and side effects from, conventional anti-epilepsy drugs.

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GRANTS-IN-AID

Applications are invited for Grants-In-Aid for research in Otorhinolaryngology or the related fields of biomedical science to commence in 2013.

Grants-In-Aid are for a period of up to two years and must be conducted in an Australian or New Zealand institution. Otolaryngologists or Trainers in the Specialty are eligible to apply. Please note that a current awardee, whose fellowship, scholarship or grant is due to conclude after 30 June 2013, is ineligible.

The annual level of support will be up to AUD$50,000 and grants are restricted to equipment and maintenance only. Usually commitments will not be made in which continued support over many years is implied.

Closing Date: 31 August 2012

Further details concerning the above awards and information concerning the application forms can be obtained from:

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