The experience of seizures is relatively common in the Australian population with up to 8% of people experiencing one or more seizures in their lifetime with half of those being diagnosed with epilepsy, a disorder in which people are predisposed to recurrent seizures. The first seizure is a frightening experience and has implications in terms of driving, safety, employment and can also have a significant impact on mood. As part of the Austin Hospital Epilepsy service we have collected a database of patients since 1994 who have presented to the First Seizure Clinic. These patients have presented to the hospital with an event that was thought to be a first seizure. The aim of this project is to review the initial diagnosis when patients first presented to the clinic and then re-contact participants to monitor outcome variables including subsequent seizures, response to medication and other variables relating to diagnosis, management and outcome in epilepsy.
<table>
<thead>
<tr>
<th><strong>Project Aims/ Objectives:</strong></th>
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<tbody>
<tr>
<td>Please state the aims and objectives and how they were achieved.</td>
</tr>
<tr>
<td>1) Measurement of long-term seizure outcome for epilepsy syndromes and sub-syndromes</td>
</tr>
<tr>
<td>2) Analysis of risk factors for poor outcome</td>
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<tr>
<td>3) Examination of the accuracy/evolution of the initial diagnosis</td>
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<tr>
<th><strong>Research conducted to date:</strong></th>
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<tbody>
<tr>
<td>Please provide a brief summary of methodology, trials, experimental procedures, etc.</td>
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<tr>
<td>1) Initial Classification: The process of comprehensively reviewing the initial presenting diagnosis for the study cohort of 3047 patients has been completed. I am currently analyzing a subset of this cohort</td>
</tr>
<tr>
<td>2) The process of approaching patients for re-consent will now increase given the classification at onset has been completed. To date we have outcome data on 740 patients with 28 excluded due to developmental delay.</td>
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<th><strong>Significance and Outcomes:</strong></th>
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<tr>
<td>Please state significance, for your field and medicine in general, and outcomes of the research project.</td>
</tr>
<tr>
<td>Please list any proposed future research in this field</td>
</tr>
<tr>
<td>The aim of this research is to address gaps in current knowledge of long-term epilepsy outcomes. In addition, the findings will directly contribute to improving health outcomes for people with new onset epilepsy. In particular, they will optimise evidence-based management and interventions, and will be directly applicable to the clinical situation. The study will provide evidence-based data that is directly relevant to decisions made by the clinician and patient regarding management of symptoms, lifestyle, work and medication use. It will also promote identification of individuals at risk of poor outcomes, therefore facilitating tailored anti-epileptic therapy for at risk cases. Further, it will contribute to identification of low risk patients which may enable tailoring of therapy to reduce medication side effects. This study will contribute to preparation and hypothesis generation for a future prospective long-term multi-centre study.</td>
</tr>
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</table>
Academic Output:

Publications and/or abstracts produced as a result of the project.

1) Publications arising from the primary project; new onset epilepsy. Given the long-term nature of this project it was necessary to complete the initial classification of patients before analysis could be performed. Although there are no immediate publications arising from this project we are currently writing two papers with a view to submission for publication later this year. The first of these papers will examine delays to diagnosis of a first seizure and epilepsy. This analysis will specifically address the frequency of prior events, delay to presentation and risk factors for delay in 226 patients who attended a First Seizure Clinic. The second publication to arise from our early analysis will address the risk factors for reactive seizures and will address common provocative factors in reactive seizures. This analysis encompasses a cohort of 180 patients defined as having reactive seizures.

2) Publications arising from related research; analysis of outcome following epilepsy surgery.


3) Publications arising from my PhD research and other publications.


Carney PW, Harvey AS, Berkovic SF, Jackson GD & Scheffer IE. (2013) Siblings with refractory occipital epilepsy showing localized network activity on EEG fMRI. Epilepsia.10.1111/epi.12076

Carney, P. W. (2012). Studying the mechanisms of absence seizure generation using EEG with functional MRI. PhD thesis, Department of Medicine, Austin Health, Faculty of Medicine, Dentistry and Health Sciences, The University of Melbourne.

http://repository.unimelb.edu.au/10187/16664


Invited Symposium Presentation. Epilepsy Society of Australia, Hobart, 2012 – EEG with functional MRI


Acknowledgements

I would like to acknowledge the support of my Supervisor Professor Sam Berkovic and the assistance of Dr Anne McIntosh. I would also like to thank the college for its assistance to enable me to continue my research career.

Award Recipient Signature:

I certify that the information supplied in this report is true and correct. I understand that the Royal Australasian College of Physicians may wish to verify this information with any institution or individual. I consent to such inquiries.

Signature: 

Chief Investigator/Supervisor Signature:

I, Sam Berkovic (Supervisor) of the Epilepsy Research Centre, University of Melbourne (Name of institution where research was undertaken)

have read this report and believe it to be true and correct version of the research undertaken during this period.

Signature: 