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Conferences with Benefits

Linda Nichols
Editor

I was so impressed when I was reading the abstracts from this year’s annual conference. The quality and diversity was really impressive and Leigh's editorial echoed many of my own thoughts about how conferences are about so much more than just listening to talks and presentations.

As an academic a major activity for me is attending professional conferences both as a speaker and as a delegate. The benefits are hard to quantify however here are a few thoughts from my experience.

The first benefit that comes to mind is of course the opportunity to present, not only scientific research to others but also to present case studies and/or changes in practice. This can often be a really daunting undertaking, however anyone who has attended an ANNA conference will know that the conference is really supportive of first time presenters and it is a great platform to share your work in a friendly environment.

The second area that is often overlooked as being important when attending conferences is the opportunity to participate in workshops and breakout meetings. Short interactive workshops are now a norm at most conferences, often over breakfast or lunch, these short sessions allow delegates to network and learn new skills. These are a great opportunity to cover topics that are not suited to lengthy courses and when attending a conference, it’s always good to make the most of these opportunities.

The final area that I find invaluable for brainstorming, networking and making vital connections are social events. Many a collaboration has begun with networking between sessions or during a social event. Getting to know potential collaborators occurs more naturally in person where genuine impressions are made. So never underestimate a social event, always make the most of conference workshops and always remember that conferences are an invaluable experience beyond the presentations themselves.

Linda

2018 ANNA Conference Reflections

Leigh McCarthy
Conference Convenor

The ANNA conference was held at the Sheraton mirage in the Gold Coast this year, we had over 100 delegates attend and have received positive feedback.

The standard of presentations delivered were outstanding and all social functions met everyone’s expectations. I had the pleasure of networking with new and familiar faces.

Preparation for the 2019 ANNA conference has already begun. It was voted to take our meeting across the waters to our newly re-opened chapter of New Zealand.

We will be calling for abstracts soon, so please think about presenting.

Have you nursed a patient that was really interesting or come across a rare diagnosis that you want to expand your knowledge on?

It would be great if you could present this at our next conference. All presentations are then encouraged to be submitted for publication in the AJON.

If presenting is something you would like to do and don’t know where to start you can contact myself or our beautiful lifetime member Dr Jennifer Blundell who can help get you started.

Hope to see lots of neuroscience nurses in New Zealand.

Cheers

Leigh

The final area that I find invaluable for brainstorming, networking and making vital connections are social events. Many a collaboration has begun with networking between sessions or during a social event. Getting to know potential collaborators occurs more naturally in person where genuine impressions are made. So never underestimate a social event, always make the most of conference workshops and always remember that conferences are an invaluable experience beyond the presentations themselves.
Multifocal Motor Neuropathy: A clinical case study

Madeline A Bone

Abstract
Multifocal motor neuropathy is a rare and chronic movement disorder associated with the progressive weakening of the patient’s limbs. This case study examines the clinical presentation, findings, treatment, and outcome of a female patient treated with intravenous immunoglobulin therapy. The case study illustrates the important role the neuroscience nurse plays in the care and treatment of a patient with a complex disorder.

Keywords: multifocal motor neuropathy, movement disorders, intravenous immunoglobulin.

Introduction:
This case study will examine a patient with a rare and disabling movement disorder. The primary objective of this essay seeks to critically analyse and discuss the neuroscience nursing care and interventions of multifocal motor neuropathy. Firstly, the patients’ clinical presentation, past medical history and the underlying pathophysiology of multifocal motor neuropathy will be comprehensively explored and the epidemiology, etiology and the patients’ risk factors will be identified. Secondly, relevant diagnostic investigations will be examined with the goal of identifying the interrelationship between the patient’s health background and risk factors. Lastly, the nursing management and treatment for the patient will be discussed with a holistic approach, taking into consideration the social, ethical and psychological effects of the disorder.

The key aspects that will be discussed in this paper will be addressed with the utmost importance placed on maintaining patient confidentiality.

Case Study:
A 65-year-old female, who will be referred to as Mrs Smith, was admitted to the ward with a history of multifocal motor neuropathy first diagnosed in 2010 after experiencing left hand wasting. A nerve conduction study this admission revealed motor block. She had a history of hypertension and a previous hip replacement, otherwise the patient was generally well. The patient’s current symptoms included limited use of both hands/fingers due to significant weakness, pain in hands, ulnar muscle wastage and bilateral foot drop. The patient had been receiving a maintenance dose 22.5g intravenous immunoglobulin (IVIg) every 4 weeks with a loading dose of 120mg once a year. The current admission on the ward was for a five-day course of 120mg of IVIg.

Multifocal motor neuropathy (MMN) is a slow, progressive motor disorder in which the demyelination of motor axons occurs (Nowacke & Teener, 2012). The likely etiology of MMN is an autoimmune attack on the motor nerves (Lawson & Arnold, 2014). MMN is an acquired disorder that is associated with elevated levels of antibodies to ganglioside GM1 (anti-GM1) and immunoglobulin M (IgM) antibodies (Léger, Guimarães-Costa & Iancu Ferruglia, 2015). Studies reveal the link between the presence of IgM anti-GM1 antibodies in approximately 50% of MMN patients (Vlam et al. 2015; Lawson & Arnold, 2014)
GM1 is found universally in the body, however is most abundant in peripheral motor nerves (Lawson & Arnold, 2014). GM1 is responsible for numerous functions including paranodal stabilisation and ion channel clustering (Lawson & Arnold, 2014). Disruptions to these functions results in conduction failure across the paranodal regions causing a cascading effect on the action potential propagation and leading to conduction failure in the peripheral nerves (Lawson & Arnold, 2014). The abundance of GM1 is found in the myelin of motor nerves compared to the sensory nerves, which may provide insight into why MMN does not affect sensory nerve function (Lawson & Arnold, 2014). The progressive nature of the disorder is due to autoantibodies binding to GM1 gangliosides, activating the classical complement system pathway and causing nerve damage by initiating the complement membrane attack complex within the peripheral nerves (Yuki, Watanabe, Nakajima & Spath, 2010).

MMN is a chronic disorder that tends to mimic the more fatal form of movement disorders, motor neuron disease (Lawson & Arnold, 2014). A recent study revealed one third of patients are given an initial diagnosis of motor neuron disease (MND), with further testing eventually ruling MND out (Dimachkie, Barohn & Katz, 2013). MMN is considered a benign disease, however the functional impairment can have a serious effect on the patient’s quality of life (Cats et al. 2010). The prevalence of MMN is estimated to affect 1-2 in 100,000 individuals (Meuth & Kleinschnitz, 2010). A study has revealed the mean age for onset of symptoms is approximately 40 years old. (Meuth & Kleinschnitz, 2010). As in Mrs Smith’s case, the upper extremities are usually the first to be affected and most often the presenting symptom (Latov, 2014). The nerves that are most commonly affected are the ulnar, median and radial nerves, with patients presenting with difficulty extending the fingers and wrist and a reduced hand grip (Lawson & Arnold, 2014). This is in line with Mrs Smith’s initial symptoms. The patient currently has restricted movement in both hands as well as weakness in her arms and lower limbs. MMN causes muscle atrophy which is relatively mild in the early stages of the disease and worsens as the disease progresses (Berger, McCallus & Lin, 2013). The specific cause of this disorder is still not known. A known risk factor is gender, with men being twice as likely to develop the disorder than women (Sutedja, 2010). Mrs Smith does not have any past history or risk factors that would indicate that she would be at risk of developing the disorder.

To correctly diagnose Mrs Smith, she underwent nerve conduction studies. Nerve conduction studies are considered the gold standard, as the test can identify multifocal partial conduction blocks (Meuth & Kleinschnitz, 2010). Motor conduction blocks are defined as a decrease of action potentials recorded from a specific or group of muscles subsequent to proximal nerve stimulation as compared with distal nerve stimulation (Lawson & Arnold, 2014). MMN affects the multifocal partial conduction blocks on motor nerves, but not sensory nerves, which is why MMN affects the movement of the limbs but has no sensory impairment (Yuki, Watanabe, Nakajima & Spath, 2010). An international study has revealed 80% of MMN patients have conduction blocks detected in the ulnar nerves and 77% detected in median nerves (Cats et al. 2010). Mrs Smith underwent further diagnostic imaging including a computed tomography scan (CT) of the brain and comprehensive blood tests which showed no evidence of disease. However, the nerve conduction study revealed a motor block in the ulnar and median nerves which confirmed the diagnosis of MMN.

Mrs Smith had managed the disorder for nearly a decade with effective treatment options allowing her to maintain independence. The treatment Mrs Smith had been receiving for the past 6 years was intravenous immunoglobulin therapy (IVIg). MMN has no known cure, however therapies, such as immunoglobulin therapy, aim to reduce motor deficits, slow down ongoing axonal degeneration and promote remyelination (Léger, Guimarães-Costa & Iancu Ferfoglia, 2015). IVIg is a solution manufactured from human plasma protein (Australian Red Cross, 2018). It contains typical IgG antibodies with a broad spectrum of antibody activity and is used to treat patients requiring antibody replacement as well as autoimmune, hematological and neurological disorders (Australian Red Cross, 2018). The mechanism of action of IVIg is not fully understood, however it is thought the antibodies work against the mechanisms of the classical complement pathway in order to
IVIg neutralises pathogenic antibodies, inhibits antibody production by B cells and suppresses inflammatory mediators produced by T cells (Léger, Guimarães-Costa & Iancu Ferfoglia, 2015). Several studies prove that IVIg has a beneficial long-term effect on muscle strength, however it is not able to prevent a small decrease in muscle strength and increase of axon loss as the disorder progresses (Nobile-Orazio & Gallia, 2013; Léger et al. 2008). A retrospective study of 40 patients with MMN found that 68% of patients were dependent on long-term maintenance IVIg infusions to stabilise their motor condition (Léger, Guimarães-Costa & Iancu Ferfoglia, 2015). Most patients will become less responsive to IVIg therapy over time and will therefore require higher and more frequent doses to achieve the result (Lawson & Arnold, 2014). Similarly, another study revealed that patients who did not receive IVIg treatment suffered more severe weakness and had further progression of axon loss in comparison to those patients who received IVIg treatment (Jovanovich & Karam, 2015).

The effectiveness of IVIg treatment is dependent on how soon after diagnosis treatment is commenced. A recent international study found that 94% of the 88 MMN patients examined responded positively to IVIg treatments (Jovanovich & Karam, 2015). The 6% of MMN patients who did not respond to the treatment had been diagnosed with the disorder later and their symptoms had become advanced (Jovanovich & Karam, 2015). Furthermore, the dosage strength and frequency of infusions plays a significant role in the effectiveness of treatment (Léger et al. 2008).

Mrs Smith was admitted to the ward for a dose of 120g IVIg over five days. The Clinical use of Intravenous Immunoglobulin in Australia Guidelines recommend IVIg be given initially at a 2g/kg dosage over two to five days (Australia Red Cross, 2018). This ratio accurately correlates with Mrs Smith’s weight and the prescribed dose of 120g of IVIg. A loading dose is common practice among practitioners internationally and is then followed by maintenance doses of 0.4-1g/kg every two to four weeks (Australia Red Cross, 2018; Schaika et al. 2006). Mrs Smith had been receiving maintenance doses of 22.5g IVIg every four weeks, however in the last few months she had reported her symptoms becoming more severe. In response, her IVIg dose was increased to 24.5g.

As a registered nurse, working within the neuroscience department, progressive motor disorders are not uncommon and the registered nurse needs to be able to provide the highest quality of care for these patients. It is important the neuroscience nurse understands the pathophysiology behind the disorder, as well as the correct administration of IVIg. IVIg must be given under strict protocols, ensuring the six patient rights are completed with two nurses and cross checks of the product, dose and rate. Reactions to IVIg are most likely to occur within the first hour of the infusion, therefore the patient must be closely monitored and the patient’s vital signs checked regularly (Australian Red Cross, 2018). Common adverse reactions the neuroscience nurse must be aware of include headaches, chills or fever, nausea and vomiting. Mild allergic reactions may occur such as skin rash and mild changes to heart rate or blood pressure. The neuroscience nurse must be aware of severe reactions that may occur during transfusion such as; anaphylaxis, haemolysis, thromboembolic events or aseptic meningitis (Hahn et al. 2013). IVIg can have a negative effect of the patient’s renal function, therefore Mrs Smith’s renal function should have been checked prior to commencing the infusion and continued to be monitored over the course of five days (Lawson & Arnold, 2014).

Along with closely monitoring the patient’s vital signs during and after the IVIg infusion; the role of the neuroscience nurse is to accurately monitor upper and lower limb strength, movement and sensation. The neuroscience nurse must also help with mobility and meal assistance. It is the role of the neuroscience nurse caring for a patient with MMN to advocate for that patient and provide a multidisciplinary approach to care, involving the physiotherapist and a social worker or discharge planner if the patient is struggling to manage with their disability. Mrs Smith lived alone and was mobilising with a four-wheel walker. An occupational therapist offered to assess her living conditions to implement further aids within the house, however she declined the services. Patients with MMN are faced with
not only the physical challenges that are attributed to the disorder, but the psychological and social effects can negatively affect the patient’s quality of life. In 2016, a large international study revealed 75% of MMN patient’s felt exhausted and left with no energy to complete day time tasks, as well as 59% stating they were embarrassed by their limitations (Katz, Lewis & Spatafora, 2017).

Reflection:
Caring for patients such as Mrs Smith allows for improved clinical skills and an in depth knowledge of IVIg infusions, which will benefit future patients and provide fellow colleagues with a resource of information regarding the expected benefits, risks and nursing interventions that are associated with IVIg infusions.

Conclusion:
MMN is a rare disorder that purely effects motor function. However, due to the disabling and incurable nature of the condition, patients may struggle with emotional and psychological issues. The correlation between MMN risk factors and Mrs Smith’s medical history was weak, with the patient’s age being the only known risk factor for her developing the disorder. There is strong evidence to suggest that early treatment of MMN is the most important factor in long term functional outcome. Fortunately, Mrs Smith was treated early and has been responding well to IVIg treatment.

Acknowledgement
The author acknowledges the generosity of ‘Mrs Smith’ in providing permission to write this case study.

Conflict of interest
The author declares no conflicts of interest.

References:


Diet therapy for adults with refractory epilepsy - a review of the evidence

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DOI: 10.21307/ajon-2017-012a

Epilepsy is a chronic neurological condition that affects 0.5% -1% of the world’s population (WHO 2009). Epilepsy is described as a syndrome of recurrent unprovoked seizures, which is not limited to one disease but a group of disorders (WHO 2009).

Refractory epilepsy is described as a failure to control seizures despite adequate use and trial of 2 antiepileptic drugs (AED’s) (Kwan et al. 2010). Epilepsy that is not controlled by AED’s is reported to occur in approximately 30% of people newly diagnosed with epilepsy, and the percentage of people likely to become seizure free with multiple trials of AED is less than 20% (Luders 2008). People with epilepsy experience significant negative impacts on their social, cognitive and physical functioning that contributes to reduced quality of life (QoL) and increased mortality when compared to the general population (Mohammed et al. 2012).

Diet Therapy involves the modification of the ratios of carbohydrate, fats and proteins in a person diet to induce ketosis. The build up of ketones within the blood is believed to impact the onset, propagation and cessation of seizure activity in the brain (Kossoff et al. 2011). The exact mechanism is unknown but the use of diet therapy for treatment of epilepsy in children has shown to be efficacious.

Diet therapy in adults with refractory focal epilepsy is an alternative therapeutic option often not considered. The purpose of this review is to discuss what the current evidence base for the use of diet therapies in adults with refractory epilepsy.

Getting the stockings right! Improving evidence based practice for neurosurgical patients

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DOI: 10.21307/ajon-2017-012b

Venous Thromboembolism (VTE) is one of the most common complications following a surgical procedure and its prevention and management is an important aspect of care particularly in those patients who are classed as high-risk patients (Assareh, et al, 2014).
Neurosurgical patients are at a high risk of developing (VTE) for various reasons including; long duration of surgery, long immobilization times post-surgery and possible neurological deficits from complications, which can influence mobility (Lukassen et al., 2014). VTE prophylactic reduces the risk of DVT and Pulmonary Embolism (PE) by about 50 percent (Mitchell et al., 2015). Collins et al. (2015) discusses that adherence to the VTE prevention guidelines are not embedded into routine clinical practice internationally or in Australia.

The aim of this study is to determine; (i) the current practice of Neurosurgical nurses in regard to VTE prophylaxis (GCS – Graduated Compression Stockings) in this patient group; (ii) what improvements are required from the identified issues/concerns to optimize clinical practice and (iii) how may such improvements reduce the incidence of potential VTE events.

This study will be an exploratory and observation study using a mixed methods approach combining quantitative and qualitative research processes using a survey (patients and staff), focus groups and audit tool. The analysed results (audit and surveys) will be fed back to nursing staff at focus groups with the aim to explore the enablers and barriers to policy compliance and evidenced based nursing practices around GCS management.

The results will be further explored and presented at future focus groups with the aim of developing quality improvement projects. The study has ethics approval and is currently being conducted on the neuroscience ward and unit at a major teaching hospital in NSW.

**Medulloblastoma: a complicated story with new technology and hope as the game changers**

Sharryn Byers  
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DOI: 10.21307/ajon-2017-012c

Medulloblastoma is an uncommon tumour in adults with incidence rates of 0.6-1 per million or approximately 1% of all cranio-spinal tumour presentations. In this case study we follow the complicated journey of a man and his family from diagnosis, treatment and rehabilitation to discharge.

During his journey the patient, his family and the healthcare team faced many challenges including rare cranial radiotherapy side effects, CSF infection, ventriculoperitoneal shunt malfunction and social impacts. Finally a B-Braun sensor reservoir with ProGav 2.0 set at 0mmHg with ProSa set at 2 mm Hg was implanted, the first time in Australia.

The presentation will focus on this new technology and explore the theme of hope in long term critically ill neurosurgical patients as for this man and his family these made a difference.

**G-forces, the brain and Newton’s Law**

Vicki Evans  
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DOI: 10.21307/ajon-2017-012d

The thrill to go fast and push boundaries is something that many seek. From John Stapp’s rocket sled at Edwards Air Force Base in the late 1950’s to today’s Formula 1 drivers, the “need for speed” is broadcast across TV screens weekly. So too are the horror stories of crashes, many at over 300km/hr. How does the brain stand up to speed and G-forces? Are Newton’s Laws current today?

There has been much attention in the general press on the possibility that high G-force roller-coasters are inducing brain injury in riders. However, research today does not wholeheartedly support this, rather the risk of brain injury from a roller-coaster is not in the rides, but in the rider – caused by previously undetected brain conditions. That said, there is some truth that high G-forces do affect the brain at a chemical and structural level.

This talk will discuss the mechanism of head injury at speed and generally what Newton’s Law means in a neurological setting in today’s world. Formula 1 racing and roller coaster rides will be evaluated within a neuroscience context.

Keywords: Concussion, head injury, Newton’s Law, Formula 1, roller-coasters.

**Evaluation of Parkinson’s disease passport booklet**

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DOI: 10.21307/ajon-2017-012e
Parkinson’s disease (PD) is a complex and multifaceted disease. Studies have shown that people with Parkinson’s (PWP) who are hospitalised are more likely to develop comorbidities such as delirium, urinary tract infections, reduced mobility, increased risks of falls, medication errors, worsening of Parkinson’s symptoms and subsequently experience an increased length of hospital stay.

The PD passport is a brief but comprehensive resource booklet designed to assist the care of the person with Parkinson’s disease (PWP) from a medical, nursing and carer/patient’s own perspective. The passport includes details of Parkinsonian symptoms, medication regimen and other aspects of care that is specific to the PWP.

Aim: The aim of the study is to determine the impact of a personalised Parkinson’s disease passport on the care and management of a PWP admitted to an Australian hospital.

Method: This is a qualitative pilot study involving two cohorts of 10 patients in each arm. One cohort of 10 patients with PD admitted to hospital will be studied without the provision of the PD Passport and a second cohort will be studied with the PD Passport provided. Separate qualitative questionnaires was provided to the patient/carer, doctors and nurses to measure their experience in caring for the PWP during their admission.

Results: No statistical significance was elicited in patients’ doctors’ and nurses’ experience. Patient experience was the closest to achieving statistical significance out of the three groups. Cognitive impairment also detected in 85% of the subjects.

Conclusion: Contrary to expected outcomes, the results of this study suggest that the use of a Parkinson’s passport does not significantly impact the patient’s care when admitted to hospital. Further prospective study with a larger

The brain on fire - anti-NMDAR encephalitis

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DOI: 10.21307/ajon-2017-012f

Anti-NMDA receptor encephalitis is a rare disease that occurs when antibodies produced by the body’s own immune system attack the N-methyl-aspartate receptors (NMDAR) in the brain (Anti-NMDA Receptor Encephalitis Foundation, 2018).

For a relatively rare condition, Toronto Western Hospital (TWH) noted a staggering four cases of anti-NMDA receptor encephalitis in 2016 alone.

Patients develop a multistage condition that progresses from psychosis, memory deficits, seizures, respiratory difficulties, abnormal catatonic movements and language disintegration into a state of unresponsiveness (Dalmau, Lancaster, Hernandez, Rosenfeld and Gordon, 2011).

This case study will focus on the pathologies and medical journeys of three female patients diagnosed with anti-N-methyl-D-aspartate receptor encephalitis at TWH.

This presentation will discuss the unique presentations of each of the cases and the individualized nursing care plans developed to address the unique needs of this patient population.

More specifically, it will highlight the importance of ensuring patient and staff safety in the development of these care plans. It will also discuss the need for implementing ongoing evaluations of these nursing care plans to address the developing needs of patients as they proceed through the diverse and complex phases of the condition.

Building evidence to support best practice specialist nursing services for people with Parkinson’s disease in regional communities: an integrative literature review

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DOI: 10.21307/ajon-2017-012g

Background: Parkinson’s disease is a chronic, neurodegenerative, incurable, complex and disabling neurological condition. In Australia and worldwide, the prevalence of Parkinson’s compared to other neurological conditions is exceeded only by dementia.

The median time from onset to death is 12.2 years, and in Australia, an estimated 89% live most of those years at home, with the remaining 11% living in residential facilities. As our population ages prevalence is increasing and is higher in rural and remote areas. Disease progression is a major driver of costs and carer burden due to increasing dysfunction in motor and cognitive capacity, leading to increasing risk of hospital and resi-
dential care admission and a need for specialist services. Integrated, specialist nursing care is largely absent in regional communities, leading to lower health related quality of life and poorer management of the condition compared to urban areas.

Method: A four-stage integrative framework guided the literature review undertaken to identify evidence-based models of care specifically focused on the role of the community based specialist neurological nurse caring for people with Parkinson’s.

Results: Fourteen models of specialist nursing care from five countries are included. Best practice outcomes focused on improving quality of life through nurse-led clinics, early intervention strategies, specialist neurological assessment, technological advances such as telemedicine, multidisciplinary and interdisciplinary collaboration, support for family and carers and greater in-reach into acute facilities.

Conclusions: Specialist primary nursing services that maximise the scope of the nursing role, are multidisciplinary and use the latest technological advances are more likely to be sustainable and cost effective for service providers and people with Parkinson’s in regional communities.

Mood screening in acute stroke

Sheila Jala, Martin Good, Aneeta Lal, Phillip Zingwe
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Background: Post stroke depression (PSD) is prevalent in approximately in one third of all stroke survivors. It is associated with increased length of stay, poor functional outcome, higher risk of recurrent strokes and increased risk of mortality.

In 50% - 80% of cases, PSD is often undetectable and undertreated. It is important in the care of stroke patients to assess their mood for early detection and intervention management of depression. The clinical guidelines for stroke recommends all patients be screened for depression using a validated tool. However our current practise does not routinely screen stroke patients for depression. This has inspired our nursing team to develop a mood screening protocol as part of the acute stroke care for early detection and management of depression.

Method: Senior acute stroke unit nurses developed a mood screening protocol that will be administered by nurses for stroke patients. We reviewed several screening tools along with consultation with a Neuropsychiatrist, the Patient Health Questionnaire 2 (PHQ 2) and Patient Health Questionnaire 9 (PHQ 9) were chosen because they are relatively easy to use, requires very little time to administer and involves minimal training. The Speech Pathologist was consulted to modify the tools for stroke patients with aphasia.

Results: The mood screening protocol was trialled for 3 months. The use of the PHQ 2 and PHQ 9, including the modified version for aphasia were easy to use and able to incorporated in patient assessments. In summary, 26% of the ASU admissions were referred for formal assessment of depression post stroke.

Conclusion: Following review of the mood screening protocol in the ASU, it is now integrated into the nursing care plans and is also been added to the electronic patient stroke assessment forms.

Journey of a novice research team

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DOI: 10.21307/ajon-2017-012i

Background: Current pain management strategies for post-operative craniotomy patients are limited due to concerns about the effect of stronger analgesic agents on level of consciousness and respiratory status. There was an opportunity for practice change to optimise the care & experience of patients undergoing elective craniotomy. Intravenous patient controlled analgesia (PCA) fentanyl was introduced for this patient cohort.

Aim: The aim of this presentation is to provide an overview of the journey taken by the research team from inception to commencement of the study.

Methods: Extensive consultation was undertaken with key stakeholders during the planning phase. A number of challenges were experienced which required a tenacious, determined & cohesive approach from the research team. These challenges included gaining support from Neurosurgeons, allocating time to do the research whilst balancing clinical & administrative roles & having little funding.
This mixed methods study saw patients in the treatment group interviewed 3 times during their patient journey & administered questionnaires; patients in the non-PCA group were interviewed once. Recruitment & patient tracking therefore required an organised, systematic approach; this approach also applied to the extensive review of patient medical records.

Thematic & narrative analysis of the qualitative data was chosen with team members contributing to the analysis of each transcript. The potential impact of reflexivity during this analysis phase was acknowledged given the neurosurgical nursing background of each researcher.

Preliminary results indicate that the use of PCA fentanyl in this patient cohort is safe with patient satisfaction noted.

Conclusions: This research study required a coordinated team approach. The benefits to patient care are rewarding for the effort & time expended.

Purposeful collaboration - enriching lives for people with Parkinson’s disease

Vincent Carroll
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DOI: 10.21307/ajon-2017-012j

Patients with Parkinson’s disease have more admissions, longer admissions, more complications and worse outcomes compared to similar patients without PD.

Aims: For patients with Parkinson’s Disease >75%: Identified <4 hours of admission; Receive on-time medications; Carer satisfaction with medication management.

Method: Emergency Department patient tracking board icon; Earlier referral to Pharmacists; contraindicated medications avoided; Medications administered on-time; Process developed alternatives to oral route for medication administration; Clinical guideline for care of patients admitted to hospital.

Results: 19% increase medications on-time; 89% reduction in contraindicated medication prescriptions; Reduced length of stay in hospital. 80% patients or carers were very satisfied with their medication management.

Conclusion: Patient safety increased along with the experience of patients and carers. The care experience and clinical staff are more satisfied. Aims met.

Functional neurological disorders nursing management

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DOI: 10.21307/ajon-2017-012k

Functional neurological disorders (FND) comprise of somatic symptoms such as blackouts, paralysis, abnormal movements and weaknesses that suggest the presence of an underlying neurological condition however none of the symptoms are explained by disease. FND is caused by a complex combination of biological, psychological and social factors on the brain (Hallet, M. 2012).

Common functional disorder symptoms include limb weaknesses, dissociative attacks and chronic pain. It is estimated that between 2 to 33 per 100,000 people suffer dissociative attacks and 90 people per 100,000 suffer from functional weakness (Stone et al, 2009). Functional weakness interestingly has a similar prevalence to multiple sclerosis. Functional symptoms can be difficult to diagnose due to the nature of the symptoms as well as patient background and history. This presents many problems for health practitioners in the diagnosis, treatment and rehabilitation phases of care.

The cost of medically unexplained symptoms (MUS) is estimated to cost the NHS in England £18 billion per year (NHS 2015). An Audit by the NHS estimate FND patient’s average 5 ward admission, 6 accidents and emergency admissions and 24 days length of stay in hospitals between 2009-2012 (Adjei, M. Coebergh, J. A. 2014).

This presentation aims to raise awareness of FND by providing an insight into the diagnosis, treatment and rehabilitation of the disorder. The presentation will discuss nursing strategies used to help treat and progress patients through therapy and explore the stigma surrounding FND and how it can be reduced to deliver effective treatments and provide the patients with evidence based care to ensure better outcomes and reduce hospital length of stays. There will be two case presentations at the end discussing poor and successful outcomes.

Low-fat versus ketogenic diet in Parkin-
son’s disease: a pilot randomised controlled trial

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DOI: 10.21307/ajon-2017-012l

Background: Preliminary evidence suggests that dietary manipulation may influence motor and non-motor symptoms in PD, but conflict exists regarding the ideal fat to carbohydrate ratio.

Objectives: We designed a pilot randomized controlled trial to compare the plausibility, safety, and efficacy of a low-fat, high-carbohydrate diet versus a ketogenic diet in a hospital clinic of PD patients.

Methods: We developed a protocol to support PD patients in a diet study and randomly assigned patients to a low-fat or ketogenic diet. Primary outcomes were within- and between-group changes in MDS-UPDRS Parts 1-4 over eight weeks.

Results: We randomized 47 patients, of which 44 commenced the diets and 38 completed the study (86% completion rate for patients commencing the diets). The ketogenic group maintained physiological ketosis. Both groups significantly decreased their MDS-UPDRS scores, but the ketogenic group decreased more in Part 1 (low-fat group: -0.99 +/- 3.63 points vs ketogenic group: -4.58 +/- 2.17 points, P<0.001), with the largest between-group decreases observed for urinary problems, fatigue, daytime sleepiness, and cognitive impairment; there were no between-group differences in the magnitude of decrease for Parts 2-4. The most common adverse effects were excessive hunger in the low-fat group and intermittent exacerbation of the PD tremor and/or rigidity in the ketogenic group.

Conclusions: It is plausible and safe for PD patients to maintain a low-fat or ketogenic diet for eight weeks. Both diet groups significantly improved in motor and non-motor symptoms, however the ketogenic group showed greater improvements in non-motor symptoms.

Managing migraines with a nurse

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DOI: 10.21307/ajon-2017-012m

Managing migraines with a nurse gives the patient an opportunity to sit down with a clinician to take the time to discuss the signs and symptoms of their condition. This allows the Multidisciplinary team to have a clearer diagnosis of the type of the patient’s headaches and migraines.

The patient who has Migraines is often left feeling like nobody understands their condition; the nurse who will empathetically guide the patient through their migraine journey can have an enormous impact on the patient’s life. In the past migraine has often been disregarded by the general population and even medical professionals at time with stigmas attached to their condition.

Nurses can play a significant role in migraine management by offering the patient ongoing support, empathy and advice. Many patients benefit from information about over the counter medications, prescription medications, management of their triggers and the adjustment of their lifestyles and early effective treatment to assist with their management of migraines.

During this discussion we will cover the role of the Headache specialist nurse in a clinical role working alongside a multidisciplinary team in a private setting.

Collaborative multidisciplinary approach to improve door to needle time for hyper acute stroke treatment

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DOI: 10.21307/ajon-2017-012n

Thrombolysis and endovascular treatment for patients with ischaemic stroke is a time critical therapy. Delay in treatment increases mortality, worsens disability and reduces efficacy of treatment.

This quality improvement project was conducted at a tertiary referral facility in Sydney. Collaboration with health professionals from all disciplines (e.g. Emergency, Neurology, Neurointerventional radiology and Intensive Care) where included to outline roles for team members and implementing an emergency stroke call out system.

Prospective data was collected before implementation (July 2014-March 2016) and after implementation (April 2016-December 2017).
To co-ordinate and achieve early notification of multidisciplinary team for stroke thrombolysis to improve thrombolysis rates and door to needle time. A Neurointerventional radiology (INR) CNC was appointed for a 6 month period to examine work processes and patient’s safety and care journey.

Processes:
1) Pre-hospital identification of patient requiring transfer and treatment in a tertiary hospital.
2) Examining triage processes and requirements of care from an ED perspective.
3) Co-ordination of teams attending “Stroke page” and their responsibility.
4) Patients clinical treatment destination location.

Descriptive statistics were performed; medians (IQR) for continuous data and frequencies/percentages for categorical data. Differences for continuous data were explored using the Mann-Whitney U-test and categorical data were explored using the Pearson’s chi-square test.

There were no group differences in patient characteristics; the sample was predominantly male with mild to moderate stroke severity and median age 78 years. There was a trend to an increased thrombolysis rate but this was not statistically different; before 152 of 589 (25.8%) vs after 209 of 725 (28.8%) patients received thrombolysis (P=0.22). The difference in median time to treatment was significant: 65.5 (45.0-84.0) vs 47.0 (30.3-65.0) min, P<0.001, respectively.

Implementation of committed multidisciplinary stroke team using an emergency stroke call out system resulted in a trend to improved thrombolysis rate and time to treatment.

Impact on patients with Obstructive Sleep Apnoea (OSA) of spinal precautions: is it time to change practice?

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DOI: 10.21307/ajon-2017-012o

Obstructive Sleep Apnoea (OSA) occurs in approximately 5% of the population. In the surgical population the impact of undiagnosed OSA is gaining a greater understanding although the impact on patient outcomes in the neurosurgical population has not been investigated. This case study will outline the journey of a patient for whom the combination of undiagnosed OSA and a C1# proved fatal. The learnings from both a literature review on spinal precautions and the case review process will be shared.

The intended outcome is to increase knowledge and awareness of the impact of OSA along with the need to alter our care for this at risk population. The evidence for how we alter our care, however, is not currently available.

Malignant middle cerebral artery infarct: an integrated clinical case presentation and literature review

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DOI: 10.21307/ajon-2017-012p

Ischaemic stroke accounts for 87% of all strokes. It occurs when a clot or a thrombus blocks a blood vessel, cutting off blood flow to a part of the brain. If large proportions of a hemisphere are affected, space-occupying oedema may result leading to rapid neurological deterioration, irreversible coma and death. Malignant middle cerebral artery infarction (MMCAI) is a life-threatening form of ischaemic stroke involving the whole middle cerebral artery (MCA) territory and comprises up to 10% of all MCA territory infarctions.

Mary was a 62 year old women found collapsed at home by her daughter who after unsuccessful treatment with ECR later underwent surgical decompression. Mary made a good functional recovery returning home to live independently. This case highlights the vital role the stroke nurse specialist and critical care nurse play in the assessment and treatment of this typical patient who experienced a MMCAI and underwent complex interventions.

Treatment with intravenous tissue plasminogen activator for acute ischaemic stroke after reversal of Dabigatran and Idarucizumab: a case study

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DOI: 10.21307/ajon-2017-012q
Treatment options for anticoagulated patients presenting with ischaemic stroke are limited. Off-label use of idarucizumab to rapidly reverse the anticoagulant effect of dabigatran may ensure eligibility for thrombolytic therapy with recombinant tissue plasminogen activator (rTPA). This case describes a 77 year-old previously independent man of Anglo-Saxon origin who presented to hospital 89 minutes following sudden onset of right sided hemiparesis, dysarthria and facial palsy. Significant history included Atrial Fibrillation (AF) and previous right-sided cortical stroke. Medication reconciliation revealed he was taking dabigatran 150 mg twice a day, the last dose – 179 minutes prior to presentation.

An urgent non-contrast computed tomography (CT) scan showed no new infarct or haemorrhage. 60 minutes from hospital arrival a decision was made to give idarucizumab to reverse the anticoagulant effect of dabigatran, in the absence of any contraindication, the patient was successfully treated with intravenous (IV) rTPA. Both rTPA and idarucizumab were tolerated with no adverse outcomes.

At discharge, the patient’s new stroke symptoms were completely resolved. In this case, the reversal of dabigatran using idarucizumab was safe and successful with no rTPA adverse events. Clinicians should consider dabigatran reversal for those who are otherwise eligible for thrombolysis. Further reporting of patients who receive this therapy will be of use in the absence of trial evidence. Additionally, the role of the stroke nurse was vital in ensuring that team members were working together towards providing quality hyperacute stroke care for this patient.

**Australia’s first patient with Huntington’s Disease treated with Deep Brain Stimulation surgery**

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DOI: 10.21307/ajon-2017-012r

Objectives: 1. Outline the patient’s progress during the first 12 months following deep brain stimulation (DBS) surgery to treat chorea secondary to Huntington’s disease. 2. Describe the role of the Movement Disorder Nurse Practitioner.

Materials/Methods: Baseline clinical presentation, the screening process for surgical suitability and pre-operative assessments will be overviewed. The surgical technique for insertion of bilateral globus pallidus interna (GPI) electrodes will be described, highlighting the difficulties due to atrophy of the target structure. Multi-disciplinary team reviews during the first twelve months, including stimulation parameter adjustments, will be explained. The reduction in chorea movements will be demonstrated through progressive video assessments.

Results: Four months after DBS the generalised chorea movements reduced by 56%. There was a positive impact on the patient and carers quality of life. Stimulation induced side effects, including bradykinesia and other potential complications of DBS, will be presented.

Conclusions: There was a reduction in chorea movements and a marked positive impact on quality of life following GPI DBS surgery in a carefully screened person with Huntington’s Disease.

**Poster Abstracts**

**Long term evaluation of clinical and radiological outcomes after anterior cervical discectomy and fusion, using a porous titanium cage and an anterior plate (work-in-progress)**

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DOI: 10.21307/ajon-2017-012s

Anterior cervical discectomy and fusion (ACDF) has been used since the 1950’s to relieve symptoms associated with cervical disc diseases. Developments to reduce complications have included the use of intervertebral cages and the optional use of anterior cervical plates. Titanium, PEEK, and carbon fiber are the materials leading the technical advances in cage design.

Recently, porous titanium has shown favourable osteoconductivity properties, with preliminary results from cervical cages (EITGmbH) reporting fusion in 80% of ACDF patients at 12 months. Despite these developments, no single cage/plate combination is considered the gold standard. This study aims to provide information on the long term use of porous titanium cervical cages used in combination with a plate, by reporting on the clinical and radiological outcomes of ACDF patients over 5 years.
A prospective cohort study of 50 1-2 level ACDF patients with a 5 year follow up period, commenced in 2017. The study will evaluate the clinical and radiological outcomes of ACDF surgery, with post-operative follow-ups at 6 weeks, 3, 6 and 9 months, then annually for 5 years. Clinical measurements include the assessment of pain (VAS), disability (NDI), general health (SF36), and surgical data. X-rays at each follow-up and a 12 month CT scan will be used for radiological assessments including the evaluation of fusion, cage subsidence/complication, global cervical angle, and Adjacent Segments Disease.

Porous titanium cages have shown promising initial results in ACDF patients. This study will enable further evaluation of these cages by providing comprehensive long term results on the clinical/radiological outcomes of ACDF patients. Additionally, analysis of this cohort to historical controls that have used alternative cage/plate combinations will contribute towards the development of a gold standard ACDF technique.

The creation and evolution of a nurse led first seizure clinic

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DOI: 10.21307/ajon-2017-012t

The creation and evolution of a nurse led first seizure clinic. Up to 10% (Angus-Leppan, 2014, pp. 27-31) of the population will have a seizure during their lives. Between 35 and 70% (Angus-Leppan, 2014) of those will have further seizures. In a pilot study done at Waikato hospital, 41% of those presenting to a new, nurse led, first seizure clinic (NLFSC) were thought to have had an event clearly identified as a seizure.

The pilot study was set up with the aim of creating a permanent NLFSC. It was felt that this clinic would allow patients to be seen more timeously, triaged, investigated and then followed up where appropriate. A first seizure questionnaire was developed, in consultation with specialist neurologists. Data from the questionnaire was captured into a database for analysis.

Two groups were identified as potential referrers to the clinic, GPs and the emergency department. Education sessions were held and a new referral form was developed and distributed. Questionnaires were completed by a nurse and discussed with a neurologist. Most patients had an EEG at the time of the consultation. Where possible, the EEG was reported by the neurologist supervising the clinic and all patients were discussed with the neurologist. During that discussion a working diagnosis was put forward, follow up was planned, further investigations initiated and the critical issue of driving discussed. When 200 patients had been seen an audit was conducted. A decision was made to continue the clinics in a slightly modified manner using a lightly modified questionnaire.

This presentation is not about analysis of the data which will be published elsewhere. It is about the evolution and effectiveness of a nurse led clinic for this group of patients.

Bibliography
The Louie Blundell Prize

This prize is in honour of our colleague Louie Blundell and will be awarded for the best neuroscience nursing paper by a student submitted to the Australasian Neuroscience Nurses Association (ANNA) for inclusion in the Australasian Journal of Neuroscience by the designated date each year. The monetary value of the prize is AUD$500.

Louie Blundell, was born in England, and although she wanted to be a nurse she had to wait until after World War II to start her training as a mature student in her late twenties. Later she and her family moved to Western Australia in 1959. She worked for a General Practice surgery in Perth until a move to the Eastern Goldfields in 1963. Subsequently, she worked at Southern Cross Hospital and then Meriden Hospital. During this time she undertook post basic education to maintain her currency of knowledge and practice, especially in coronary care.

Louie was also active in the community. She joined the Country Women’s Association and over the years held branch, division and state executive positions until shortly before her death in 2007. She was especially involved in supporting the welfare of students at secondary school, serving on a high school hostel board for some time.

She felt strongly that education was important for women and was a strong supporter and advocate of the move of nursing education to the tertiary sector, of post graduate study in nursing and the development of nursing scholarship and research, strongly defending this view to others over the years.

For further details and criteria guidelines please visit the ANNA website at www.anna.asn.au
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