

P177

Patient Acuity Tool Project. The BMT Network, NSW

Chloe Ahern

BMT Network NSW

Introduction

The Patient Acuity Tool project began as a pilot study in 2005. "Patient Dependency Systems" or "Patient Acuity Tools" have been developed for many different specialties. However, very few have been detailed or focused on Haematology/Bone Marrow Transplant (BMT). Describing patients in the Haematology/BMT setting in terms of a combination of tasks to complete, as well as physiological factors such as blood pressure and respiratory rates, can give an indication of a patient's "acuity". Grading this acuity can give an accurate measurement of the workload of each individual patient.

Objectives

This qualitative study was undertaken to demonstrate patients that would ordinarily be on a unit with a higher level of care i.e. a High Dependency Unit (HDU) or Intensive Care Unit (ICU), are kept for periods of time on the Haematology/BMT Units, due to the complex and specialised care that they require.

Method

A 4 page assessment tool was developed from an earlier 2005 pilot study, and was completed daily between 1300 and 1600 hrs on all haematology/BMT patients on each of the 9 units that were participating in NSW. The Tool was completed if a patient was admitted as an emergency or was transferred to a higher level of care outside of the usual recording times. The assessment tool graded patients from level 1-4 (lowest to highest), with levels 3 and 4 equating to a HDU type patient. The study was continued for 24 weeks across the participating sites. Interrater reliability was used to assess reliability of the tool and a modified Delphi Method was used to ensure the validity.

Results

Over 11000 tools (patient days) were completed in the 24 week period. 6012 tools were level 1, (54%) of the total. 4626 were level 2, (42%) of the total, which was not unexpected, as most patients would fluctuate between the levels on a daily basis according to their individual stage of treatment. 335 (3%) of the tools were level 3, and 79 (0.7%) of the tools were level 4. There were 1947 patients admitted and over the period. 79 (4%) patients were transferred to either ICU or HDU,

Conclusion

This validated and reliable tool is useful for demonstrating the acuity of Haematology/BMT patients, and can be used as a predictor for the degree of care required for this group of patients.

No conflict of interest to disclose

P178

Snapshot of Haemophilia A Patients with hepatitis C in South Australia

Andrew Atkins¹, Anne Till¹, Lay Tay², Simon McRae², John Lloyd²

¹ Royal Adelaide Hospital, Adelaide SA, Australia

² Division of Haematology, Institute of Molecular and Veterinary Science, Adelaide SA, Australia

Background

Hepatitis C is the most common transfusion transmitted viral infection seen in patients with bleeding disorders who were treated with plasma-derived blood products prior to 1990. Many patients and their families are now dealing with the consequences of chronic liver infection; of the six patients with haemophilia and hepatitis C who have died in the last 36 months, five of the deaths were directly related to their liver disease.

Aim

Our adult treatment centre has 131 haemophilia A patients, of which 85 have tested hepatitis C antibody positive. We recently conducted a hepatitis C update to determine more closely the needs of our patients.

Results

Of the 85 adults that are hepatitis C antibody positive, 37 have cleared the virus, with more than half of these (20) doing so without treatment. Some 34 patients have been treated, with 17 achieving a sustained viral response. The other 17 patients failed therapy, due to poor or no response, relapse after therapy, or complications of side effects, and are now being monitored. Three patients are currently on therapy, with another five planning to commence. Three patients current status are unknown. Of the remaining 20 patients who have not received treatment, eight are yet to have an initial hepatology consult (median age=38 years), seven are considered by their hepatologists to be inappropriate for treatment, and two have declined treatment. The genotype of 13 patients is unknown, with only three of these ineligible for treatment.

Conclusion

It is crucial that this patient group is educated and aware of treatment potential and the importance of looking after their liver health. Obstacles to achieving this were found to be distance and poor compliance. These barriers need to be overcome to give all patients the opportunity for surveillance and effective early treatment before liver damage occurs.

No conflict of interest to disclose

A407

P179

Creating an Accurate Haematology Patient Database: A Continuing Project

Sarah Louise Gallacher, Philip Rowlings
Calvary Mater Newcastle, New South Wales, Australia

Background

Haematology units need to have accurate and timely diagnostic information of patients under their care. An accurate database has the ability to reduce workload, be a valuable tool for measuring outcomes for patients, and to allow units to make comparisons with national and international standards.

Aim

This project was commenced to obtain comprehensive diagnostic information of all patients attending the unit from January 2009 onwards. The updated database will allow identification of patients for clinical trials and/or new treatments as they occur within the unit.

Method

A Project Officer with Haematology nursing experience was appointed for a period of one year. Using a specific database designed for oncology and haematology units, patients were identified that did not have accurate diagnosis classification. Primary diagnostic reports were sought to ascertain diagnosis, date of diagnosis and method used. Using the internationally recognised coding system, ICD-10-AM, patients were coded according to that diagnostic information.

Results

From April 2008- April 2009, 3356 patients attended the unit. Of those patients 57% had a diagnosis on the database at the commencement of the project. Four months into the project 77% of patients now have a diagnosis. The five most frequent diagnoses were Non-Hodgkins lymphoma, Chronic lymphocytic leukaemia, Disorders of iron metabolism, Polycythaemia and Multiple myeloma. The most frequent obstacle in determining diagnosis was patients being diagnosed at an outside institution. The database itself proved difficult as the most recent ICD-10-AM codes were not available. The coding system was also found to be not specific enough especially in identifying patients for clinical trials.

Conclusion

The Haematology patient database project is still in progress but has already shown to be a useful tool within our Hospital. Planning is ongoing on how it will be maintained as an accurate and suitable resource tool.

No conflict of interest to disclose

P181

Case Study: Goodpasture's Syndrome Treated with Regular Consecutive Therapeutic Plasma Exchange

Zoe Grinter, Annabel Horne

Haematology Oncology Ambulatory Care, St Vincent's Hospital Sydney, NSW, Australia

Background

Goodpasture's Syndrome (GS) is a rare disease (0.5/million/year). Typical presentation involves haematuria and rapidly progressing renal failure. Additionally, haemoptysis, cough and respiratory failure are not uncommon. Reports in the literature describe a variable clinical course, with mortality rates as high as 50%.

Mrs JS, a 57 year old woman, presented to the emergency department of St Vincent's Hospital with acute onset cough, haemoptysis, myalgia, fevers, pleuritic chest pain, and headaches. Full blood count, renal, liver and coagulation blood tests were undertaken, along with a renal biopsy and lung function tests. A diagnosis GS was made. JS was admitted by a renal physician and commenced aggressive therapy. A referral was made to a haematologist with a view to commencing therapeutic plasma exchange (TPE).

Aim

To reduce the number of circulating anti-glomerular basement membrane (GBM) antibodies in order to stop any further deterioration in kidney and lung function.

Method

JS underwent three courses of five consecutive TPE using the Cobe Spectra cell separator. Two litres of 4% Albumex was used as replacement fluid for each TPE. The apheresis was used in combination with high dose pulse steroids, oral cyclophosphamide, and three times weekly haemodialysis. A double lumen Vascath was used for both apheresis and haemodialysis. TPE procedures were well tolerated and not associated with any complications.

Results

The patient has been discharged from hospital and her respiratory and renal function is much improved. This has been associated with a reduction in the number and frequency of haemodialysis required. Her anti-GBM level is now undetectable.

Conclusion

This case illustrates that TPE is a safe and successful procedure. The combination of oral chemotherapy, steroids, haemodialysis and TPE prescribed for JS reflects current best practice for the treatment of fulminant GS.

No conflict of interest to disclose

A409

P182

Humidified Air in the Transplant Setting

Patricia Harris¹, Judy Magarey²

¹ Haematology and Bone Marrow Transplant Unit, Royal Adelaide Hospital, Adelaide, South Australia, Australia; ²Discipline of Nursing, University of Adelaide, Adelaide, South Australia.

Aim

A pilot study was developed to determine whether the use of humidified air for patients undergoing haemopoietic stem cell transplantation (HSCT) would reduce mucositis, associated pain and febrile episodes.

Method

A randomised controlled trial was used, with patients randomised to either standard hospital protocol as control, or standard hospital protocol plus humidified air as the treatment arm. Twenty patients were entered into the study at the Royal Adelaide Hospital Bone Marrow Transplant Unit. Baseline data analysis included determining if there were significant differences between the two arms by disease type and conditioning chemotherapy. Outcome data between the two arms were analysed to determine if there were significant differences with regard to body temperature, mucositis grading and oral pain.

Result

The major findings of this study concluded that there was no statistically significant reduction in pain, mucositis grade and mean temperature in the treatment group. There was some clinically significant reduction in reported pain at the World Health Organisation (WHO) grade 2 mucositis toxicity grade in the treatment group. There was also some clinical significance at WHO grade 4 mucositis in a reduction of mean temperature in the treatment group patients. Some patients on the treatment arm reported improved oral comfort when wearing the humidified air.

Conclusion

Compliance was a limiting factor in this study, as was the number of patients enrolled. Further research would be beneficial in exploring the clinical significance of the differences in grade 2 and 4 mucositis, with regard to pain and temperature. While this research has not led to changes in the standard management of mucositis in patients during HSCT, there have been instances where Ear Nose and Throat specialist consultation has resulted in the use of humidified air for selected patients.

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P184

Designing and Implementing a Haematology Specific Nursing Assessment Form

Elizabeth V Hayes, Rachelle Frith

Haematology Unit, The Prince of Wales Hospital, Randwick, NSW, Australia

Background

Essentials of Care (EOC) is a practice development framework encompassing nine domains of person-centred care focusing on evaluation and improvement. EOC follows a two year cycle of five components, the first of which commenced in May 2008, which included a one-week period of observation and audits of nursing documentation. Results showed varied compliance in completion of nursing care plans for haematology patients. Following feedback of this information a number of issues were identified with the current generic hospital wide care plan and its use in the haematology setting.

Aim

To design and implement a haematology specific nursing assessment form. In addition, improve documentation of patient care and communication between nursing staff, particularly during patient handover.

Method

- Researched use of haematology specific care plans within South Eastern Illawarra Area Health Service
- Developed a haematology specific nursing assessment form reflecting the nursing care provided and fulfilling documentation requirements
- Collaboration and feedback sought from haematology nursing staff
- 3 month trial commenced February 2009
- Audit completed May 2009

Results

The initial audit of the haematology specific nursing assessment form illustrated increased completion of nursing assessments and documentation by staff. Utilising the form during handover has enhanced communication between staff regarding patient care. Nursing staff also provided positive feedback regarding the streamlined and user friendly format of the new form. Additionally, new and agency staff found the assessment form to be beneficial when completing nursing assessments of haematology patients.

Conclusion

The implementation of a haematology specific nursing assessment form has facilitated compliance in documentation and communication between nursing staff. It has also shown to be a valuable tool in assisting clinical handover.

No conflict of interest to disclose

A411

P185

Developing a Pathway for Monitoring Hyperglycaemia in Patients Receiving High Dose Steroids

Lisa Elliott¹, Lyn Green¹, Mitra Guha¹, Michelle Hargreaves¹, **Allan Hayward**^{1,2}, Noemi Horvath¹, Amanda Migga¹, Janette Prouse¹, Terry Ventrice¹

¹*CNAHS, Royal Adelaide Hospital, Adelaide, South Australia.*

²*SA Pathology, Adelaide, South Australia.*

Aim

High doses of steroid medications are frequently used alone or in combination to treat malignancies or manage associated symptoms. One potential side effect of steroid administration is hyperglycaemia. Consequently patients already diagnosed with diabetes may need to adjust hypoglycaemic medications while those patients without a diabetes diagnosis may require insulin support while receiving high dose steroids. Previously, no formal pathway for monitoring of hyperglycaemia in this patient population existed. Our aim was to collaborate with staff from the Endocrine Department to develop a pathway that appropriately identified patients requiring further management and/or treatment of steroid induced hyperglycaemia.

Method

A pilot project conducted in 2007/2008 for all patients commencing VAD chemotherapy demonstrated that not every patient requires self monitoring of their blood glucose levels. A new pathway was then developed to identify patients requiring referral for self blood glucose monitoring based on an elevated random serum blood glucose level. The pathway was introduced in May 2008 and was specifically designed for any patient receiving high dose steroid medication and only those with hyperglycaemia referred for self blood glucose monitoring education.

Result

To date only one patient has required referral for self blood glucose monitoring instruction using this new pathway. Patients referred via this pathway will be audited and the results presented.

Conclusion

A formal pathway for monitoring and appropriate referral of patients experiencing steroid induced hyperglycaemia has assisted in ensuring that these patients receive appropriate management of this potential side effect of treatment.

No conflict of interest to disclose

P186

A Case Study of a 48 Year Old Male Developing Zygomycosis after 2nd Cycle of Chemotherapy for AML

Gillian Parkin

Bone Marrow Transplant Unit, Christchurch Hospital, Christchurch, New Zealand

Presentation

The 48yr old male patient presented to the unit after being referred by his GP. The patient had been feeling tired and lethargic for a few months, with minor skin and throat infection with delayed healing. The patient had recently been given a course of antibiotics by his dentist for gingivitis. Blood tests on arrival showed an Hb 90, WBC 0.6, Neut 0.11 and Platelet count of 101. A Bone Marrow aspiration was performed which showed a blast count of 54%. The diagnosis was discussed with the patient and his partner, a Hickman line was inserted and DA 3+10 chemotherapy commenced.

Treatment

The chemotherapy was given without major incident; the patient did receive IV antibiotics. Having had a prolonged episode of neutropenia and no count recovery a repeat BMA was performed on 22/04/09. The marrow showed a failed response with 42% blasts and a second cycle of DA3 +8 chemotherapy was commenced, Etoposide for 3 days was added on the 30/4/09. The patient developed a fever and a CT scan on the 11/05/09 was performed, a respiratory review was called for, and a bronchoscopy was performed on 12/05/09. A diagnosis of Zygomycosis was confirmed and the patient commenced on IV AmBisome. The patient had a severe reaction on the first dose, receiving pre medication for the remainder of the course. A further CT performed on 26/05 /09 showed an increase in size of the lesion and the patient underwent surgery: a right upper lobe lobectomy was performed. The patient came back to the ward 2 days later and was commenced on Posaconazole, and discharged on the 02/06./09

Zygomycosis

Zygomycosis is a fast growing fungi that can occur in patients who are immunosuppressed, suffer severe burns, diabetes, lymphoma and leukaemia. The fungi can invade the vessels of the arterial system causing embolisation and necrosis of the surrounding tissue. Rapid treatment is needed to treat successfully. At the time of this abstract the patient is back on the unit, neutropenic after a course of MACE chemotherapy.

No conflict of interest to disclose

A413

P187

Challenges Faced in Developing a Haematology Cancer Nurse Coordinator Role in Western Australia

Kerin Young¹, Leanne Monterosso²

¹ *WA Cancer & Palliative Care Network, Perth Western Australia.*

² *WA Centre for Cancer and Palliative Care, Curtin University, Perth Western Australia*

In 2006 there were 848 reported cases of malignant haematological disease in Western Australia. Haematological malignancies are a diverse group of neoplastic disease that often develop with little warning and require immediate, intensive and lengthy treatment.

Many cancer patients experience confusion and lack of information in their dealings with cancer care services and they are often unable to access appropriate care in a timely manner. In Western Australia, the Cancer Nurse Coordinator (CNC) position was implemented in 2006 as both a strategic and clinical role to facilitate continuity of care and access to appropriate resources for cancer sufferers.

This paper will discuss the challenges faced in the development and alignment of this role within current service provision and resources, being mindful to avoid duplication of services or confusion. An initial scoping exercise identified a key aim of the Haematology CNC is to promote the role as an accessible point of contact for both patients and health professionals in the provision of informational, practical and emotional support; health system navigation; and onward referral. Further, the role is viewed as pivotal in facilitating timely communication with General Practitioners, primary health care providers and the treating centre. Many gaps in service provision were also identified and a follow-up to the scoping exercise has been the development of a study to: a) identify specific unmet needs of haematology patients and b) to promote future evolution of the CNC role. A brief presentation of the key elements of this proposed study will also be presented.

No conflict of interest to disclose

