A combined Victorian Institute
of Forensic Medicine
and Victorian State
Coroner's Office publication.

CORONIAL COMMUNIQUÉ

VOLUME 7 ISSUE 3.
September 2009

ISSN 1834-2221

CONTENTS

PUBLICATION TEAM

Editor in Chief: Nicola Cunningham
Editorial Team: Joe Ibrahim
Adam O'Brien
Designer: Caroline Rosenberg

Address: Clinical Liaison Service
Coronial Services Centre
Victorian State Coroner's Office
L1, 436 Lonsdale St
Melbourne 3000
Telephone: +61 3 86880700

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EDITORIAL

August shaped up to be a month of change for us here in the Clinical Liaison Service. We farewelled Amanda Charles who, with her background in nursing and research has been an invaluable part of CLS for many years. Amanda has made a tremendous contribution to the work and the goals of CLS, and we wish her well in her new career path. We also welcomed Amanda Froelich as a new CLS research nurse. We are excited about the added scope and expertise that she brings to the Service and look forward to forging new directions as a team and achieving new initiatives for patient safety.

This month also heralds the much anticipated move to our new premises. Together with the Coroners, and the Coroners Prevention Unit, we say goodbye to our offices at Kavanagh Street, Southbank, and head up to Lonsdale Street where we will continue to work closely with the Coroners, the pathologists, the police, researchers and administrative staff, to review healthcare-related deaths and promote change.

This issue of the Coronial Communiqué highlights two cases where the issues of routine monitoring and the adequacy of patient observations practices were explored. There is also a case summary that details a medication error with a commentary that outlines the changes that occurred as a result of the case.

LOOK-ALIKE DRUG NAMES

CASE NUMBER: 3522/07

CLINICAL SUMMARY

Ms B was a 16 year old female with a history of cystic fibrosis who had received a heart and lung transplant 4 years earlier. She was admitted to hospital for investigation of a raised temperature and worsening liver and renal functions. She was diagnosed with a reactivated Epstein Barr Virus infection and treated with broad spectrum anti-viral, antibacterial, and anti-fungal medications.

One of Ms B's charted medications was "Azithromycin" (an antibiotic), however was given "Azathioprine" instead. She had previously been treated with this medication following the transplant, but had not been prescribed it for some time. The medication error was recognised by the hospital and she was closely observed for any potential complications that could arise as a result of the adverse event. Despite appearing to tolerate the inadvertent administration of Azathioprine, she developed respiratory failure and died 1 week later. Cause of death was 1a) Aspergillus sepsis, 1b) Immunosuppression, 1c) Heart lung transplant for cystic fibrosis.

FEEDBACK

The CLS team is keen to receive feedback about this communication especially in relation to changes in clinical practice.

Please email your comments, questions and suggestions to: **cls@vifm.org**

REPRODUCTION

If referring to this publication, the following citation should be used: Coronial Communiqué [electronic resource]: Clinical Liaison Service, Connecting Clinicians and Community with Coroners. Southbank, Vic. State Coroners Office; Victorian Institute of Forensic Medicine. Available at: **http://www.vifm.org/communique.html**

Other publications including the Residential Aged Care Coronial Communiqué and WORKWISE can be found on our website at **http://www.vifm.org/n961.html**

COMMENTARY ON LOOK-ALIKE DRUG NAMES

Author: Melita Van de Vreede, Deputy Director of Pharmacy (Quality Use of Medicines) Eastern Health, Adjunct Research Fellow, Department of Pharmacy Practice, Monash University.

One of the contributing factors to the adverse event identified in this case was look-alike drug names. To reduce the risk of these name pairs being confused in the future, additional yellow medication labels using the concept of Tallman letters were utilised by the hospital. These were attached to the shelves below the usual labels for the drugs that were stored in the ward imprest.

Tallman letters are recognised in the USA as a strategy to prevent confusion between similar drug names[1] but are not well known in Australia. They involve highlighting and capitalising dissimilar letters in two names to aid in distinguishing between them, (eg azATHIOprine and azITHRomycin).Tallman letters can also be incorporated into electronic prescribing or dispensing systems such that they are visible when practitioners view similar looking drug names on the computer screen.

The nursing staff were enthusiastic about the benefit of Tallman letters in reducing the risk of a medication selection error. The drugs for which tallman letters should be used were reviewed by considering the commonly used drugs, and previous errors and near misses relating to look-alike drug names at the hospital. This list was rolled out to all ward imprests as well as to the pharmacy department.[2] This is a simple, inexpensive strategy that could be implemented in any area where drugs are stored.

1. FDA and ISMP Lists of Look-Alike Drug Name Sets With Recommended Tall Man Letters. http://www.ismp.org/tools/tallmanletters.pdf

2. Van de Vreede MA, McRae A, Wiseman M, Dooley MJ. Successful Introduction of Tallman Letters to Reduce Medication Selection Errors in a Hospital Network J Pharm Pract Res 2008; 28: 263-6.

RECENTLY CLOSED CASES

1894/06 A 78 year old female with a background of rheumatoid arthritis and ischaemic heart disease with recent unstable angina, underwent coronary artery bypass graft surgery and an aortic valve replacement. At the completion of the operation, blood was noted in the endotracheal tube. The tube was urgently changed to a dual lumen endotracheal tube and an angiogram was done for a ruptured pulmonary artery occurring from a pulmonary artery catheter. Despite successful embolisation and coiling, she required increasing inotropic support post-operatively and developed multiorgan failure. Following a family discussion, treatment was withdrawn.

886/07 An 18 month old male was born with congenital abnormalities that necessitated a permanent tracheostomy to maintain an adequate airway. The tracheostomy was secured with a padded neck strap and adjustable Velcro fastener. He was found unresponsive in his cot with his tracheostomy tube dislodged, and died the next day from hypoxic brain injury associated with tracheostomy tube placement failure. The hospital involved in the care of the deceased implemented changes as a result of the case. These included recommending the use of cotton tapes secured with knots in infants and young children with a tracheostomy, and routinely providing monitoring with a pulse oximeter for children who do not have an adequate airway should their tracheostomy tube become blocked or dislodged.

OBSERVING THE RISKS

CASE NUMBER: 652/06
Case Précis Author: Dr Nicola Cunningham FACEM, CLS

CLINICAL SUMMARY

Mr N was a 20 year old male with a history of heavy cannabis use who was admitted under an involuntary order to a psychiatric facility for a first episode of psychosis and suicidal ideations. The facility had an entrance which remained unlocked between 9am and 6pm. He was formally assessed as having a significant risk of self-harming and was required to undergo observations every 15 minutes. The following day he was assessed as being psychotic, perplexed and with ongoing significant suicidal ideations. He was also noted to be generally vulnerable due to his history of cannabis use and was deemed to be at risk of absconding. Therefore, his level of sightings were increased to Category C (1:1) which required that he remain within vision at all times until sleep, and then undergo 15 minute observations.

After two days, Mr N's supervision status was downgraded, however he was then found to have absconded from the ward. He had returned home and was brought back to the facility by his parents that afternoon. His mood was described as slightly elevated and he told the treating team that although he had gone to get some cannabis, he had not used any. He denied any suicidal ideations and agreed to remain in the facility for treatment so was placed under a management plan that included 15-minute sightings. At 08:15 hours the next morning, Mr N was seen in his room where he spoke to the nurse performing the routine check. When a nurse next entered his room at 08:35 hours, he was found unresponsive on his bed with a plastic bin liner from the kitchen area over his head. He was resuscitated and taken to hospital where he died three days later.

CAUSE OF DEATH

An Inspection and Report was performed by the forensic pathologist who reported the cause of death as cerebral hypoxia in the setting of plastic bag related airway obstruction.

INVESTIGATION

The case was heard at inquest and the nurses and doctors involved in Mr N's care were called to give evidence. The coroner also heard evidence from Mr N's family who explained that Mr N had expressed to them that he did not want to remain in the facility, and only returned with them at their insistence.

The coroner explored the issues of the "open door" policy during the day at the facility and acknowledged the statement provided by the psychiatrist that it was a "philosophical choice based on research that shows that treatment and social outcomes from locked units are not as good as those with an open door policy". The risks of the availability of illicit drugs and cannabis use in the setting of an "open door" facility were also discussed and the court heard that drug screens were required on all new patients. Mr N had tested positive for cannabis just prior to his initial admission, but did not undergo a urine drug screen on his return to the facility. The psychiatrist accepted that it was possible that cannabis use could have exacerbated Mr N's mental illness over the next 24 hours after his return to the facility.

CORONER'S COMMENTS AND FINDINGS

The coroner stated that Mr N would not have died in the way he did if he had been required to undergo 1:1 observations. The coroner found that Mr N should have undergone urine screening for cannabis during his admission and recommended that the facility implement routine drug screens for patients on admission and after leaving the ward without permission. The coroner also recommended 1:1 observation levels for patients who return after absconding who also test positively to urine analyses for cannabis use. This should remain until blood tests confirm whether the use was recent or not.

AUTHOR'S COMMENTS

A root cause analysis was undertaken by the facility following the death. As a result of the analysis, the bin liners used in the facility now have a hole in them to prevent similar incidents causing hypoxia. The protocols regarding the timing of patient observations were also modified so that they are now randomly undertaken with set intervals, so that patients cannot predict the times at which they will be observed.

KEY WORDS

Psychiatric facility, involuntary, suicide risk, hypoxia

RECENTLY CLOSED CASES continued

914/07 A 53 year old female with an umbilical hernia presented to hospital with severe abdominal pain. She was diagnosed with peri-umbilical cellulitis and a small bowel obstruction. Attempts to insert a nasogastric tube were unsuccessful and she was fasted and transferred to theatre several hours later for exploratory surgery. In theatre, a nasogastric tube was inserted, however she aspirated frank faeculent fluid on induction of the anaesthetic and died shortly afterwards of multisystem organ failure.

2507/07 A 41 year old male was playing soccer with his friends when he complained of chest pain, stood on the sidelines, then collapsed. CPR was commenced at the scene and he was transported to hospital where he was pronounced deceased shortly after arrival. He had complained of chest pain earlier in the week, but had not sought treatment. An autopsy was performed and cause of death was determined to be ischaemic heart disease and coronary artery atherosclerosis.

3471/07 An 85 year old female presented to hospital with abdominal pain and was diagnosed with acute cholecystitis requiring a choloecystectomy. She was considered a high-risk surgical candidate due to significant cardiac disease, and therefore underwent a transhepatic cholecystotomy procedure in the radiology department. Following the procedure she became hypotensive, rapidly deteriorated and died. Cause of death at autopsy was haemoperitoneum secondary to transhepatic cholecystotomy.

MEASURING PAIN AND SEDATION

CASE NUMBER: 3583/05
Case Precis Author: Carmel Young RN, CLS

CLINICAL SUMMARY

Mr V was a 38 year old male admitted to a private metropolitan hospital to undergo a routine orthopaedic procedure to his shoulder. His post-operative analgesia included morphine via a Patient Controlled Analgesia (PCA) device, which was commenced once his nerve block wore off. Over the next 12 hours, he used 32mg of intravenous morphine. He was also given tramadol and panadeine forte as adjunctive analgesic medication. Later that day, the anaesthetist was contacted because Mr V complained of an itch. He gave a telephone order for an antihistamine (Phenergan). Shortly afterwards, the oxygen saturations were noted to be 93%. He was given oxygen at 2 litres per minute. Further doses of Phenergan were given at 16:30 hours and 20:00 hours.

The last set of "full" observations of Mr V were recorded at 21:50 hours. He was on 6L/minute of oxygen to maintain oxygen saturations of 97%. At approximately midnight he was observed by a nurse to be "asleep and snoring normally, would be rousable if an attempt was made to rouse him." At 0215 hours, the attending nurse found Mr V non-responsive but breathing. The resident doctor was called who attempted an emergency intubation. Initial intubation was unsuccessful and was complicated by aspiration of gastric contents and seizure activity. A second attempt was also unsuccessful. A MICA unit then attended, and successfully intubated Mr V, noting that it was an extremely difficult intubation due to the anatomy and the gastric contents that obscured their view. He had a cardiopulmonary arrest shortly afterwards and did not respond to resuscitation.

PATHOLOGY

An autopsy was conducted following which the pathologists's formulation as to the cause of death was: 1a) hypoxaemia and aspiration of gastric contents culminating in cardiac arrest, 1b) convalescent phase following a surgical procedure.

INVESTIGATION

A letter was received from Mr V's family which outlined their concerns regarding the steps that were taken to monitor respiratory depression, and the medical management of the deceased in the post-operative period. Statements were obtained from the orthopaedic surgeon, the director of nursing, the anaesthetist, the resident doctor and the medical director. Following review of the statements, an expert opinion was sought from an anaesthetist regarding the monitoring of the patient and the resuscitation attempts that occurred.

The case proceeded to inquest. At inquest there was some debate about the correct application of the PCA protocol in terms of when the hourly observations were to commence, and when the protocol allowed nursing staff to reduce the frequency of their observations to two hourly.

An expert clinician with expertise in opioid toxicity was also called by the coroner to give expert testimony at the inquest. The expert stated that Mr V had identifiable risk factors for respiratory obstruction such as a documented "difficult airway for intubation" (Grade IV airway noted in anaesthetic chart) and he had received multi-drug therapy with medications (morphine, panadeine forte, phenergan and tramadol) that were likely to have played a contributory role to his sedation level and further compromise his respiratory status. The expert opined that respiratory failure appeared likely to have commenced nearly twelve hours before his deterioration into a coma. The resuscitation attempt was complicated by further airway obstruction with a failed intubation and subsequent oesophageal intubation and aspiration of gastric contents and seizures.

CORONIAL FINDINGS

Regarding the PCA, the coroner found that "there was a failure by nursing staff to comply with the PCA protocol by undertaking the required observations at midnight." The coroner made note of the Acute Pain Management Measurement Toolkit, which was published in February 2007 by the Victorian Quality Council. The toolkit has the benefits defining a clear sedation score, which accommodates the sleeping patient, and outlines the necessary responses in the event of a deterioration in the patient's clinical condition.

The coroner concluded that though it was possible there were underlying pathological causes for Mr V's gradual deterioration through the course of the night, the emergency intubation set in train a catastrophic cascade of events which ultimately led to Mr V's death. The coroner therefore modified the cause of death to reflect the findings, and found that death occurred from: 1a) aspiration of gastric contents culminating in cardiac arrest, 1b) oesophageal intubation, 1c) hypoxaemia, 1d) convalescent phase following a surgical procedure.

EDITOR'S COMMENTS

This case highlights the need to closely monitor patients with multiple risk factors as often there are early warning signs of deterioration. When faced with a patient with a decreased conscious state, basic first steps such as simple airway manoeuvres, or reversal of sedatives, may avert the need for emergency intubation or allow time to obtain expert airway assistance. It is not always necessary to seek a definitive solution at the outset when a temporary one is available. Ventilation, not intubation, is the priority.

KEYWORDS

PCA, morphine, expert, sedation, intubation, aspiration

All cases that are discussed in the Coronial Communiqué are public documents. A document becomes public once the coronial investigation process has been completed and the case is closed. We have made every attempt to ensure that individual clinicians and hospitals are de-identified. However, if you would like to examine the case in greater detail, we have also provided the coronial case number.