ASPAAN National Conference 2015

ECG: Should we be using this routinely in PACU?

Dr Paula Foran
ECG: Should we be using this routinely in PACU?

- My story of ECG in PACU
- Give you some evidence on the subject
- Provide you with some reasons on why I think we should all have ECG connect to our patients in PACU
- Provide some strategies for implementation
- Then you can make an informed decision whether YOU would like ECG on yourself if you were a patient
ECG: Should we be using this routinely in PACU?
THE VALUE OF OPERATING THEATRE EXPERIENCE

IN ACUTE POST-OPERATIVE PAIN MANAGEMENT

The practice of providing adequate post-operative pain relief continues to be inadequate in many clinical settings. This indicates that the undertreatment of pain is recognized as a significant healthcare problem.

Unfortunately, even after multiple acute pain management guidelines that provide strong and clear recommendations for treating acute pain (ii), post-operative pain continues to be undertreated (2, 4) and remains suboptimal (1).

A MISSING VARIABLE

Could this be a missing piece???

Could the variable be that until nurses see surgery they do not have an appreciation or empathy for post-operative pain management?

Undergraduate Nurses reported seeing surgery gave them both an understanding of why the patients had pain and what they went through which equates to empathy.

18.3% of nurses in the study did not set foot in an operating suite in their undergraduate training and 27.5% had 5 hours or less.

QUESTION

Did you find the information that you may have learned in the operating theatre assisting you in your nursing skills outside the operating suite?

“...it made me more understanding of the pain that patients complain of. It also made me more knowledgeable so I could explain procedures of processes to patients.”

“...yes, as I was able to understand what the patient has gone through and this allowed my support to the nurse to give them a little more compassion to the patient and their pain.”

“...more insight into post-operative pain and bleeding.”

“...Yes, provided greater understanding of what has been through and necessary for regular. Also experience in recovery was valuable.”

“...Yes, I did. It was a different experience from the ward. Very challenging for me. I understood the procedures and why the patients are in pain after surgery.”

“...Yes, as a para and wound care and manner of surgery relating to mobility and pain post-op pain.”

“...Yes, it helped you understand and appreciate what goes on in the OR and why patients have pain, nausea, difficulty moving etc.”

“...Yes because you can better understand anatomy and physiology and appreciate pain and complications patients may have.”

GUIDED VERSUS NON-GUIDED OPERATING THEATRE EXPERIENCE

RESEARCH

NURSES WERE ASKED ABOUT PAIN FOLLOWING:

a) Very rarely have any pain post-operative
b) Have only minimal pain as they have one
b) Have many incisions thus more pain
b) Have two incisions but may experience...
ECG: Should we be using this routinely in PACU?

- Who uses ECG routinely?
- Is this an Australian thing?
- What are others internationally doing?
ECG in the PACU Internationally

- In Britain;
- The Association of Anaesthetists of Great Britain and Ireland (AAGBI)
- Clinical observation should be supplemented by a minimum of pulse oximetry and non-invasive blood pressure monitoring, ECG, nerve stimulator, thermometer and capnography
- An ECG, nerve stimulator, thermometer and capnograph should be immediately available
- Ideally, there should be compatibility between operating theatre, recovery room and ward equipment (American Society of Perianesthesia Nurses 2012)
- The AAGBI recommends that any monitor providing continuous values, such as SpO2 and ECG, should only display a static non-invasive blood pressure value for a maximum of five minutes, after which the value should blink or disappear altogether. The value should remain stored (Birks et al. 2011)
ECG in the PACU Internationally

- In Germany – standard ECG monitoring
- In America– standard ECG monitoring

Question to the ASPAN

- Is ECG interpretation necessary in the PACU, along with running and mounting an ECG Strip?
- ‘Along with respiratory assessment and airway management, cardiac assessment is one of the most important elements of our practice as perianesthesia nurses. Hemodynamic stability is an element of safe discharge. Thorough cardiac assessment, including interpreting the ECG rhythm, is one of the best ways to assess what is going on with our patients’.

(American Society of Perianesthesia Nurses 2012)
Statistically significant post-operative QTc prolongation was observed in all study groups when compared with baseline except for the adenosine 200 µg/kg/min group. However, these changes from baseline were not different among the groups. There were also no significant differences in PR, QRS, and QT intervals between the treatment groups. Conclusion: There was no difference in QTc prolongation following intraoperative administration of adenosine infusion compared with placebo during isoflurane general anesthesia. However, QTc prolongation is common following general anesthesia (Sun, Habib, Wenger, Gratz, Glick, Adsumelli, Creed & Gan 2012).
Literature on ECG in PACU

- ECG is commonplace for phase 1 PACU (Daley & Huff, 2010)
- A study by Daley & Huff looked at whether there was a need for ECG in ASA 1 patients
- The results were that there was an 8.6% chance of developing arrhythmias in a healthy ASA 1 patient
- Incidence of cardiac arrest in the OR is estimated at 34.6: 10,000 cases (Tallman, Ramachandran, Christensen & O'Brien, 2011)
- In the PACU the incidence is 1.5 arrests per 10,000 cases (Tallman et al., 2011)
Literature on ECG in PACU

- Dysrhythmias can occur as a result of common complications such as hypoxia, hypercarbia, hypothermia or pain (O'Brien, 2013)
- Other alterations to ECG may be caused by acid base or electrolyte imbalance, cardiac ischemia (seen in ST changes), bladder distention, hypovolemic and/or effects of anaesthetic medications (O'Brien, 2013)
This is why it is important to have the vulnerable post-anaesthetic patient connected to an ECG monitor during phase 1 recovery to aid in diagnosis of these conditions (American Society of Perianesthesia Nurses, 2012; Daley & Huff, 2010; Schick, 2013)

QUIZ
What are the causes of cardiac arrest?

4 H’s & 4 T’s & consider 2 A’s

- Tamponade – Cardiac
- Tension Pneumothorax
- Toxins, poisons, drugs
- Thromboembolism
What are the causes of cardiac arrest?

- **H** Hypoxaemia
- **H** Hypovoleamia
- **H** Hypothermia
- **H** Hypokalaemia / hyperkalaemia & metabolic disorders
- **A** Academia
- **A** AMI
Rationale for early defibrillation

Early defibrillation—greatest predictor of survival rate from VT & VF arrest

- VF less than 1 minute = 99.99% discharge from Hosp.
- VF 2 minutes = 50% discharge from Hosp. (70% - 80% revert)
- VF 5 minutes = 35% discharge from Hosp.
Education

- Looking and learning
- Familiarity
- Practice makes perfect
- When patients have a known cardiac condition & staff are asked to connect a patient & monitor ECG – they have lost their skills
- If you don’t use it – you lose it
Whilst internationally commonplace, ECG monitoring is not currently mandatory for PARU patients in Australia, however, a growing number of PARUs in Australia have recognised the great advantages of ECG monitoring and have implemented ECG as standard monitoring for all post-operative patients in stage 1.
Strategies for Implementation

- Don’t be a ‘steam roller’
- Move slowly & provide evidence and ideas why this is good
- Run a survey asking ‘Do you believe ECG leads to early detection of deteriorating patients’
- ‘If you were a patient, would you like an ECG on yourself
- Watch this space!!
Thanks for your attention
Questions