Care of the post percutaneous coronary intervention patient

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Abstract (summary)

Recent literature indicates ambulation prior to four hours is preferred practice and does not impact negatively at the femoral site (Augustin et al 2010; Schiks et al 2009; Gillane et al 2009) and has also been investigated to also be a safe practice in the low risk elderly population (Rao et al 2011). The extent to which early ambulation is proving to be safe and does not result in an increase in complications means that same day discharge can be considered for PCI procedures (Rao et al 2011; Heyde et al 2007); and also with the increasing use of the radial artery for PCI access.

Introduction

The number of patients undergoing a percutaneous coronary intervention (PCI) has dramatically increased.

In Australia in 2008, 155 per 100,000 of population underwent PCI; compared with 61 per 100,000 undergoing coronary artery bypass surgery (AIHW 2010). Evidence regarding current care of the patient post PCI highlights nursing interventions such as: nursing supine; the time to ambulation following sheath removal; and use of arterial closure devices.

In Australia and New Zealand, a recent study demonstrates a wide variation in routine practice of cardiac nurses, and a lack of clinical guidelines to assist this process (Rolley et al 2010). This practice opinion article is aimed to discuss recent literature in regards to advances in nursing care for the patient post PCI and the implications this holds for current clinical practice and potentially future research.

Nursing interventions

A PCI involves the passing of a catheter through a sheath that is inserted into the femoral artery. The sheath is removed at the end of the procedure and pressure applied to the insertion site (Walker et al 2008). Three main nursing interventions involved in post PCI care are investigated: nursing patient’s supine; the time to ambulation post sheath removal; and the use of vascular closure devices.

Supine nursing
Nursing care for patients who have undergone PCI involves prevention of potential complications such as haematoma and bleeding from the femoral artery, with supine nursing most often used in nursing practice, particularly so in Australia and NZ (Rolley et al 2010). Physical complications from supine nursing include haemodynamic instability due to the physiological responses to back pain as well as urinary retention (Rezaei et al 2009). A randomised control trial investigating positioning protocols post PCI found that patients who had modified positioning and pillow support had much less back pain with no accompanying increase in complications as compared with those who were nursed supine (Rezaei et al 2009). From the patient's perspective, lying supine for long periods of time can have negative impacts such as being dependant on the nurse for bodily function needs, pain and the discomfort of not being able to move freely (Lunden et al 2006). Anxiety associated with physical immobility and pain is also of great importance to patient care, with patients often experiencing a high level of anxiety before the PCI procedure (Trotter et al 2010). Patients also describe anxiety related to being physically immobile for long lengths of time.

Time to ambulation

The time to safe mobilisation of patients after sheath removal is open to a variety of interpretations. Current practice in the Australian context demonstrates a wide variation of practice in this area, with time to ambulation reported from as little as one hour to over eight hours duration (Rolley et al 2010). Recent literature indicates ambulation prior to four hours is preferred practice and does not impact negatively at the femoral site (Augustin et al 2010; Schiks et al 2009; Gillane et al 2009) and has also been investigated to also be a safe practice in the low risk elderly population (Rao et al 2011). The extent to which early ambulation is proving to be safe and does not result in an increase in complications means that same day discharge can be considered for PCI procedures (Rao et al 2011; Heyde et al 2007); and also with the increasing use of the radial artery for PCI access.

Use of vascular closure devices (VCDs)

The introduction of VCD in the mid-1990s offered an alternative to the use of manual compression, often seen as the 'gold standard' in prevention of haemorrhage and haematoma in the femoral artery post PCI. Currently in Australia and New Zealand, only 14.5% of nurses surveyed reported using a vascular closure device, with manual compression being the most common form of femoral artery occlusion (Rolley et al 2010). Current research shows that VCDs are a safe way to achieve femoral artery haemostasis (Iqtidar 2011) while reducing the length of the patient's hospital stay (Alien et al 2011; Falcone et al 2011). Both of these studies also found that patient comfort played a greater role in reduced length of stay. Unfortunately the main focus of studies carried out on VCDs did not assess nursing care post procedure. As VCDs are becoming more widely used in PCI it
Implications for practice and future research

Implications for clinical practice and future research from this discussion highlight both the humanistic and hi-tech nature of cardiovascular nursing. The theme of anxiety associated with PCI procedure is common and there is currently a paucity of research related to this phenomenon. Falcone et al (2011) suggested patients who stayed overnight post PCI reported a reduction in anxiety. A far cheaper option is implementing improved patient education prior to the PCI procedure, where anxiety could be reduced, thus improving the patient’s experience. With the patient experience of supine nursing in mind, nurses should consider that focusing on allaying anxiety and talking with patients whilst lying supine post PCI can be of great clinical benefit (Trotter et al 2010) and is a simple, effective and inexpensive nursing care intervention that can be easily implemented. The use of vascular closure devices requires clinical practice guidelines to aid the clinician in applying knowledge to practice, with a recent Australian study (Rolley et al 2011) offering practical, evidence based starting points that cardiovascular nurses can begin to implement.

Conclusion

Using contemporary evidence to inform practice is a standard all nurses should strive to achieve. Nurses need to work together with other health care professionals to engage in dialogue related to best practices, current trends and innovations to improve the patient clinical benefit.

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References

REFERENCES:


**Author Affiliation**

CALLY MILLS IS A RN AND RESEARCH ASSOCIATE, NURSING RESEARCH UNIT, ST VINCENT'S AND MERCY PRIVATE HOSPITAL.

CHRISTINE WRIGHT IS A RN AND RM AND RESEARCH ASSISTANT, ST VINCENT'S CENTRE FOR NURSING RESEARCH.

CARoline newell IS A RN AND AUM ANAESTHETICS/PACU, ST VINCENTS AND MERCY PRIVATE HOSPITAL