Association between Time of Ambulation and Clinical Outcome of Patients after Cardiac Catheterization

Thesis

Submitted for Partial Fulfillment of Master Degree in Medical-Surgical Nursing (Critical Care- Nursing)

By

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

قَالُوا

سُبْحَانَكَ لَا عِلْمَ لَنَا

إِلَّا مَا عَلَّمْتَنَا إِنَّكَ أَنْتَ

الْعَلِيمُ الْحَكِيمُ

صَدَقَ اللَّهُ الْعَظِيمُ

سورة البقرة الآية: ٣٢

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✎ *Marwa Ramadan*

Dedication

My Deepest Thanks and Gratitude

✍ To

My Husband Mahmoud El-Badawy

✍ To

My Family Especially My Father
For their continuous encouragement
and endless support

Marwa Ramadan Abdelateif

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List of Abbreviations

Abb.	Full Term
BHC	Bilateral Hear Catheterization
BP	Blood Pressure
BUN	Blood Urea Nitrogen
CABG	Coronary Artery Bypass Graft
CAD	Coronary Artery Disease
CC	Cardiac Catheterization
CHD	Coronary heart disease
DCC	Diagnostic Cardiac Catheterization
ECG	Electro Cardio Graph
HOB	Head Of Bed
INR	International Normalized Ratio
IV	Intravenous
MI	Myocardial Infarction
OOB	Out Of Bed
PCI	Percutaneous Coronary Intervention
PT	Pro thrombin Time
PTCA	Percutaneous Trans-luminal Coronary angiography
PTT	Partial thromboplastin Time
RHC	Right Heart Catheterization
LHC	Left Heart Catheterization
SPSS	Statistical Package For Social Science
VAS	Visual Analogue Scale
WHO	World Health Organization

Abstract

Cardiac catheterization is the gold standard diagnostic test for coronary heart disease. **The aim:** the present study was conducted to assess the association between time of ambulation and clinical outcomes of patients after cardiac catheterization. **Methodology:** *Setting:* the study was conducted at the cardiac catheterization units at Ain Shams University Hospital and Ain Shams University Specialized Hospital. **Design:** The descriptive exploratory research design was utilized in this study. *Subject:* A purposive sample of 150 patients was used in the study. *Tools: 1)* Patients' interview questionnaire tool to assess patients' demographic characteristics data and patients' medical history. **2)** Patient post cardiac catheterization clinical outcomes which included Vital signs: (temperature, blood pressure, respiration, pulse), O_2 saturation, lower peripheral perfusion and cardiac catheterization site assessment. **3)** Visual Analogue Pain Scale to assess pain intensity. **4)** Anxiety Scale to measure the level of anxiety. **Results:** there was a highly statistically significant relation between patients' age and vital signs reading at the fourth hour after ambulation, and there was a statistically significant relation between patients' age and pain intensity in the first and the second hour, also there was a highly statistically significant relation between them in the fourth hour after ambulation. Where pain intensity decreased among the patients at the fourth hour'. And there was no statistically significant relation between patients' gender and pain after cardiac catheterization. **Conclusion:** Patients restricted to bed rest in supine position increased the intensity of back pain level at a time (1h) and then decreased at the time third and fourth hour after cardiac catheterization. **Recommendation:** early ambulation after cardiac catheterization is safe and its' suggested to improve patients' outcomes.
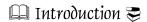
Keywords: Cardiac catheterization, position, early ambulation, outcomes, patients.

Introduction

Coronary heart disease (CHD) is a major cause of death and disability in developed countries **(World Health Organization, 2012).** Although CHD mortality rates worldwide have been declined over the past four decades, CHD remains responsible for about one-third or more of all deaths in individuals over age 35. Coronary artery disease (CAD) is the most common and type of heart disease in Egypt and an important cause of disability in Egyptians **(Lloyd-Jones, Adams, Brown, Carnethon, & Dai, 2010; Ibrahim, Ibrahim, Shaheen, & Nour, 2015).**

Cardiac Catheterization (CC) is the gold standard diagnostic test for coronary heart disease **(Gaziano & Sesso, 2011).** Cardiac catheterization has evolved over the last six decades to a highly specializes discipline for diagnostic purpose and an expanding repertoire of therapeutic advance to treat many problems **(National Center for Health Statistics, 2011).**

Cardiac catheterization is used for diagnostic evaluation in a patient with cardiac disease. Despite the progressive improvement in noninvasive technique. Cardiac Catheterization remains a key clinical tool for the assessment of the physiology and anatomy of the heart and
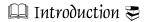
its associated vasculature. Currently, CC has become a routine diagnostic procedure performed in many hospitals **(Rezaei-Adryani, Ahmadi, & Jafarabadi, 2009).**

The procedure of CC approximately takes an hour or more depending on the condition for which it is performed. In Egypt 1500 Egyptian have diagnostic CC done every year. More than half of those patients have angioplasty or bypass surgery to improve blood supply to their heart **(Kumar & Canon, 2014).**

There are many insertion sites for CC procedure. It may be inserted in radial artery, ulnar artery, brachial artery, or femoral artery, but the most common insertion site for the catheters is femoral artery. Trans-femoral puncture via a 5F to 8F sheath (catheter) is the most common approach, but the brachial and radial arteries can also be used. After a diagnostic angiogram, coronary angioplasty and stenting may be required, which can immediately relieve symptoms and reduce the chances of recurrence of ischemic events in the future, most patients are discharged within 24 hours, with an increasing trend towards same-day discharge **(Gallagher, Trotter, & Donoghue, 2010; Bernat, Horak, & Stasek, 2014).**

Cardiac catheterization carries a slightly higher risk than any other heart tests. However, it is very safe when

done by an experienced team. These risks include cardiac tamponade, heart attack, irregular heartbeat, injury to the coronary artery, low blood pressure and reaction to contrast dye **(Davidson & Bonow, 2012).**

Complications of CC are usually temporary and may include bleeding, infection, pain at the sheath or catheter insertion site, damage to the blood vessels, blood clots and kidney damage due to the contrast dye (more common in patients with diabetes or kidney problems) **(Carrozza, 2012).**

Early ambulation and changing position in bed which reduces the length of bed rest may decrease the patient's back pain and significantly decrease the nursing staff workload, reduce in the hospital stay and also enable the patient to meet self-care needs such as eating, drinking and voiding. Many patients find it difficult to use bedpan or urinal in a supine position during the bed rest and due to special religious and cultural beliefs, this is a highly conflicting and unpleasant problem for patients. And is very important to prevent complication such as hematoma, bleeding and it can reduce back pain **(Rezaei-Adryani et al., 2009; Biancari et al., 2010).**

Nursing care following CC is the same as general postoperative care. Patients are usually placed on a cardiac

monitor for the first few hours of recovery. Pulse, especially below the insertion site should be measured, the nurse listens closely to heart and breath sounds. The nurse evaluates the peripheral circulation by noting peripheral skin color, temperature, and sensation of the dorsal pedals and posterior tibial pulses **(Urdan, Stacy, & Lough, 2010).**

Significance of the study

All patients after cardiac catheterization are restricted to bed rest in supine position with the affected leg immobilized after procedure to prevent bleeding from the groin site. Bearing such a prolonged bed rest in supine position, however, it is difficult for many patients, and it is often associated with discomfort for this. Studies show that this type of positioning is based on tradition rather than on research.

The most uncomfortable part of hospital admission for CC patients is the time required to lie in flat position after procedure that often results in back pain, so early ambulation after CC may decrease the patients' back pain and significantly reduce the nursing staff workload and also enable the patients to meet self- care needs such as eating, drinking and voiding (**Rezaei-Adaryani et al., 2009; Moser & Riegel, 2014**).

An increased rate of patients with cardiac disease who undergoing CC for treatment and diagnosis, in which 1500 cases were admitted in 2014 at Ain Shams University Specialized Hospital, which 150 case monthly, of them 70 case from Ain Shams University Hospital and 80 case from Ain Shams University Specialized Hospital (Statistical