LITERATURE REVIEW: ANXIETY ON PATIENTS WITH MYOCARDIAL INFARCTION

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ABSTRACT

Background: Myocardial Infarction is one of the major cardiac event that cause of death in the world. One of the first reaction to myocardial Infarction is anxiety, which is a natural response to a life threatening event. High level of anxiety was associated with a higher rate of all cause cardiovascular complication and mortality in the first 3 years following myocardial infarction onset.

Objective: This paper purposed to review the best evidence, guideline, or protocol to prevent and control anxiety in patients with myocardial infarction.

Methods: A range database was searched to identify studies addressing programs to increase physical function of elderly with heart failure including CINAHL, Proquest, PubMed, and manual searching from the reference list of previous obtained articles. Studies published in English 2006-2015 were included.

Results: There were ten studies in the final dataset. Factors related with anxiety were assessed in each study as characteristic and baseline studies. Studies reviewed intervention program to reduce anxiety including health education, relaxation, back massage therapy, whole massage therapy and combination between two interventions.

Conclusion: Anxiety management that nurses can use not only health education by giving information about their diseases but they can also give intervention that can decrease their anxiety such as massage and relaxation or by combing together between health education and massage and relaxation

Keywords: *anxiety, relaxation, massage, education, myocardial infarction*

INTRODUCTION

Myocardial Infarction is one of the major cardiac event that cause of death in the world (Mallinson, 2010). Based on WHO estimation, in developing country, myocardial infarction are a major public health problem (WHO, 2005). Myocardial infarction is the damage to the hearth muscle or myocardium, resulting from the lack of blood flow to the heart and overwhelms myocardial cellular repair mechanisms designed to maintain normal operating function and homeostasis (Bolooki H & Askari, 2010).

One of the first reaction to myocardial Infarction is anxiety, which is a natural response to a life threatening event. The prevalence of anxiety in patients with myocardial infarction is on average 30 %. In a meta-analysis which is include 12 studies with 5750 patients of myocardial infarction. This meta-analysis showed that anxiety has significance relationship with 36 % of new cardiac events or cardiovascular mortality (Roest et al, 2010). Jeengar et al, 2008 also reported significant number of myocardial infarction patients 35 % were having anxiety symptom, 6.6 % patients having severe anxiety, 11.6 % patients suffering from moderate to severe anxiety symptoms.

Anxiety is an emotion which is caused by unpleasant experience such as traumatic experience, social pressure and health status or disease (Lewis, 2015) and it characterized by feelings of tension, worried thoughts and physical changes like sweating, trembling, increase blood pressure. (Strike et al, 2006).

There are several factors can induce anxiety after a myocardial infarction event such as gender, age, social isolation (Dickens et al, 2006) Gender contributed significantly to variance in anxiety scores. Female AMI patients were more anxious than male AMI patients in the first 48 hours after admission to the hospital. In the general population, the prevalence of anxiety among women is reported to be higher than among men (Garvin et al, 2003).

Social isolation and lack of social support increase the risk for worsening anxiety for women patient with myocardial infarction (Murphy M et al, 2008).

High level of anxiety was associated with a higher rate of all cause cardiovascular complication and mortality in the first 3 years following myocardial infarction onset. This is link to anxiety induce action of sympathetic nervous system and the result of this action high blood pressure and platelet aggregation (Strike et al,2006). Anxiety after myocardial infarction onset also can be risk factors for myocardial infarction complications.

Patients with high anxiety levels in the critical period were five times more to experience in complications of recurrent ischemia and reinfarction (Moser & Dracup, 1995). Anxiety after myocardial infarction predicted impairment in the physical aspect of HRQoL, ongoing angina and cardiac events during the follow up period after 12 month infarction. Myocardial infarction increase the level of anxiety, affect patient's learning and ability to maintain information and decrease life quality.

Due to the high risk and impact of anxiety to patient following myocardial infarction onset, it is important to review the best evidence, guideline, or protocol to prevent and control anxiety in patients with myocardial infarction. Effective management of anxiety can imrpove quality of life of patients and decrease mortality of patients with myocardial infarction.

OBJECTIVES

1. To describe the concept of Anxiety in Patients with Myocardial Infarction.
2. To identify factors affecting Anxiety in Patients with Myocardial Infarction.
3. To identify measurement or tool to assess Anxiety in Patients with Myocardial Infarction based on current best available evidence.
4. To determine practice of Anxiety in Patients with Myocardial Infarction based on current best available evidence.

METHODS OF REVIEW

The clinical question

What is the best intervention to reduce anxiety in myocardial patients?

P: Patients with myocardial infarction

I: Anxiety management / program

C: Hospital setting and Community Setting

O: Lower level of anxiety.

TABLE OF SUMMARY SEARCHING RESULT

Data Based	No. Research	No. Of relevant research
PubMed	60	5
CINAHL	30	3
ProQuest	10	2
Total	100	10

DISCUSSION

1. **Effect of Anxiety**

a. Physical / Physiological

Anxiety as a trigger in giving impact to the heart by stimulate the autonomic nervous system and also by induced neuroendocrine systems(Wren et al 2013), anxiety increase myocardial oxygen demand, risk of cardiac dysfunction, dysrhythmia, ischemia and death (Ulvix, 2008). High levels following after myocardial infarction were associated with a higher rate of all cause and cardiovascular mortality, with the strongest association in the first 3 years of follow up (Wren et al, 2013).

In other study among of 222 patients with myocardial infarction anxiety was associated wit a more than 3-fold higher rate of cardiac events (odds ratio 3.13; 95% CI, 1.576-6.21). Patients with a high level of anxiety are shown to have poor outcomes and increased recurrence of cardiac events following myocardial infarction. Anxiety also has an adverse effect on disability, somatic symptoms, functional status and quality of life in patients suffering from myocardial infarction (Roest et al. 2010).

b. Physiological

Myocardial infarction in associated with a high level of anxiety, fear and frustration are result from sudden and serious changes in functioning. Feeling of dangers after myocardial infarction will increase need for hospitalization and it significantly affect the patients' quality of life (Mierzynska et al, 2010). Many responses of psychological are following after myocardial infarction such as exhaustion, sadness, anger, the feeling of surprise and disgust (Bowman, Watson, Trotman, 2006).

c. Social

Post myocardial infarction onset, the patients can show tendencycial withdrawal. Hanson et al, 2015 showed that patients after myocardial infarction has limited participation in social activities during the first year after infarction. Percentage of patients (27-37% of women and (22-28% of men) show a low level of social participation in formal and informal social groups.

2. Factors Affecting Anxiety in Patients with Miocardyal Infarction

a. Social Support

Patients with myocardial infarction who received support from their closest and strengthened from their family relatives were reported a better functioning and health related quality of life during the first year after myocardial infarction (Kristofferzon, Löfmark, Carlsson, 2005). Psychological support such as counseling and psychoeducation can decrease the level of anxiety.

b. Perception

Patients' perceptions due to their family experience of cardiovascular disease and the severity of their diseases can increase anxiety and depression. In actual severity levels, women perceived their event as more severe and have a more

pessimistic view about their life (Lee, 2013).

c. Gender

Gender contributed significantly to variance in anxiety scores. According to Bowman, 2006 Man manifested a higher level of anxiety about their health. On the other hand Female AMI patients were more anxious than male AMI patients in the first 48 hours after admission to the hospital. In the general population, the prevalence of anxiety among women is reported to be higher than among men (Garvin et al, 2003).

d. Personality Type D

Personality type D as a factor in cardiac diseases. Individuals with type D personality may have negative in their emotional responses. Personality type D has an important role in coping post myocardial infarction onset. Son et al 2012 reported anxiety in 21 % of patients with personality type D.

3. Measurement or Tool to Assess Anxiety in Patients with Miocardyal Infarction

In this part of anxiety measurement there is a tools to assess anxiety outcome of anxiety management in clinical practice. There are several type of measurement to assess anxiety such as HADS (Hospital anxiety depression scale), Spiel Berger Strait Trait Anxiety Inventory (STAIT), and Visual Analogue Scale.

Most of study used HADS (Arghakani, Khademvatan, Dehgani, 2013, Lewin, Thompson, Elton, 2001) and STAIT (Havva & Hatice, 2006) and one of study modified STAIT in Chinese version (Chen et al, 2011) as tools to measure anxiety outcomes for anxiety management. On the other hand some study combine HADS with Visual Analogue Scale to measure anxiety and comfort also.

Both of HADS and STAIT measurement are easy to use

because the patients or participants will easy to understand the statement in tools and also its more appropriate to apply in evaluating anxiety of patients with myocardial infarction.

4. Evidence based practice for anxiety management in patients with myocardial infarction

Based on reviewed from many literature from research studies and some clinical practice or guide line for anxiety management in patients with myocardial infarction, there are 5 studies was found about intervention related to anxiety management, all the study were experimental study. The study used different designs and methods of intervention, different outcomes wih the level of evidence and it showed in evidence table.

There are two main method of anxiety management in patients with myocardial infarction, they are health education and relaxation include massage, music terapy and audiotape relaxation. From eight literature review, it was found that giving health education as management to reduce anxiety is common to reduce anxiety. For examples, a study by Arghakani, Khademvatan, Dehgani, 2013 showed that After the intervention by giving face to face trainning and provided an educational booklet, The experimental group underwent face to face trainning and was provided with an educational booklet. This intervention was developed from some systemic review which was suggested that written materials in the form of summary letter written to the patients by the physcians or informations booklet were effective patients education strategies.anxiety and depression in the experimental group was significantly less than that in the control group atdischarge time and 3 months after discharge ($P<0.05$) (LOE: 2c; JBI, 2013).

In addition Havva & Hatice 2006 conduct individualized education to reduce anxiety of

patients with myocardial infarction on CCU. An educational booklet was prepared using information from the literature about MI and lifestyle. The educational booklet contained information about the nature of the illness, causative factors, treatment and changes that need to be made in activities of daily living after the illnes. There was a statistically significant difference between the anxiety scores and information scores of patients in the experimental group on their second CCU day and the day of transfer ($p<.01$) (LOE: 2c; JBI, 2013). The anxiety levels decreased from moderate on the second day to mild on the day of transfer.

However, there are still some intervention that were used relaxation technique to reduce anxiety in patients with myocardial infarction such as massage, music therapy, audiotape relaxation. Chen et al, 2011 used back massage therapy to reduce anxiety, Standard massage procedure was guided by an assistant professor of physical theraphy. Participants were recruited within 24 hours after admission to the cardiac ward. The intervention started 3 days after hospitalization. The Participants got back massage 15 session over 4 weeks, each session 10 minutes. Back massage (from sacral area through to cervical area) was arranged one hour before meal or two hour after meal. Back massage included pressing and stroking, kneading, rubbing. Participants with more severe heart failure and greaters level of anxiety demonstrated significantly greater respons to back massage (LOE: 2c; JBI, 2013)

Moreover there was another intervention that whole body massage to reduce amount of cortisol. Cortisol is one of the stress hormon. It means if the cortisol under control the stress level also decrease. Hajbaghery, Beheshtabad, Ardjmand, 2014 conducted study by using whole body massage to decreased blood cortisol. This study used blood cortisol as a measurement because

circulating stress hormone such as cortisol before and after myocardial infarction can be a reflective of the stressful situation. In the intervention groups, massage therapy was performed in a private room after providing a private situation for the patients in the third day of hospitalization. For each individual in the group received massage by a nurse specialist, a session of whole body massage was performed in about 60 minutes. The techniques used in massage therapy were consisted of static massage, superficial technique, stretching massage, lymph vacuming technique. 30 min before and 15 min after the termination of massage theraphy (while patient was relax at least for 15 min), the blood sample was obtained for measuring cortisol level. In the second group , a male relatives of patient was selected throug consulting with the patient and they were trainned by nurse specialist. Control group received routine care at the CCU. The median blood cortisol level before the intervention in th group that received massage by the nurse was 281,90 nanomoles which is decreased to 197.00 after the intervention ($p<0.007$) (LOE: 1c; JBI, 2013)

In addition there was intervention that used relaxation combine with education to reduce anxiety. They used advice relaxation tape (ART), The ART comprised two 30-min tapes, one for the patient and the other to be taken home by the patient's partner. The information on the tape was designed to counteract negative cardiac misconceotions. The music tape (MT) was a tape selected by the patient from a collection of popular prerecorded tapes such as opera, classical, folk. There was a statistically signifficant difference between the anxiety scores and information scores of patients in the experimental group on their second CCU day and the day of transfer ($p<.01$) (LOE: 2c; JBI, 2013) (Lewin, Thompson, Elton, 2001).

Systemic review of Bradt, Dileo, Potvin, 2013 who found

that Listening to music has a moderate anxiety-reducing effect in people with coronary heart disease (CHD). In all myocardial infarction studies, anxiety was reduced after the music intervention to STAI levels that are considered to represent low anxiety. Greater anxiety-reducing effects were found for studies that used participant-preferred music than for those that used researcher-selected music.

The intervention to manage anxiety in myocardial infarction use of anxiolytic medications (prescription, 24-hour dose administered); use of non pharmacological. Anxiety management strategies like relaxation, reassurance; presence of any follow-up evaluation of efficacy of interventions used; and consultation to assist with management of anxiety (mental health, social work, specialty nurse, pharmacist, chaplain/spiritual advisor, physical or occupational therapy, cardiac rehabilitation, or other)

CONCLUSION AND SUGGESTION

Conclusion

From all of this review, there are 8 studies was found about intervention related to anxiety management. The interventions from each literature were different in design and methods and different in outcome. There are two main method of anxiety management in patients with myocardial infarction, they are health education and relaxation include massage, music therapy and audiotape relaxation.

we can see that for anxiety management we can use not only health education by giving information about their diseases but we can also give intervention that can be decrease their anxiety such as massage and relaxation or by combing together between health education and massage and relaxation. Nevertheless, there are different in term of its effectiveness (level of evidence) and how is it used or implement the intervention because it must be considered about many factors such as cost, context of

hospital, if the interventions are appropriate with patients condition and safety.

Moreover back massage therapy was selected to apply in reducing anxiety level. This intervention do not need special equipment, low cost, can apply by nurses and less complication also. After selected the intervention, the author also develope the guideline of anxiety management in patient with myocardial infarction based on literature review. The outcome for measurement anxiety after apply the intervention by using HADS-A.

Suggestion

Nurses are important to give intervention for anxiety management in patients with myocardial infarction. As we know that high levels anxiety following after myocardial infarction were associated with a higher rate of all cause and cardiovascular mortality, so anxiety management should be initiate in early for patient. Nevertheless, every intervention must be based on the evidence to support of effectiveness.

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