Original Research

The Positive Report Of benson Relaxation For Acute Miocard Infark Pain: A Case Report Study

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Article Info	Abstract
	Structured Acute Myocardial Infarction (AMI) is myocardial necrosis caused by inadequate blood supply due to acute blockage of the coronary arteries. Typical signs and symptoms experienced in AMI patients are chest pain such as squeezing, pressing, stabbing, heat or being crushed by heavy objects. Giving pharmacological therapy such as oxygen, nitroglycerin and aspirin can reduce AMI pain, but if the effects of the drug begin to decrease the pain will back, so complementary therapy is needed to help reduce pain in AMI patients. The purpose of the research is to evaluate Benson's relaxation effect in reducing chest pain in acute myocardial infarction (AMI). The descriptive method was used by involving 2 subjects who experience chest pain. The intervention was carried out once a day for 2 days with an intervention duration of 30 minutes. The results of the evaluation were obtained, there was a decrease in both patients from 5 scales to 2 scales in patient 1 and 1 scale in patient 2. The combination of both pharmacological therapy and Benson relaxation can reduce the scale of pain. Benson relaxation can be used as a complementary therapy in reducing pain in AMI patients.

INTRODUCTION

Acute Myocardial Infarction or commonly known as AMI is a myocardial necrosis caused by inadequate blood supply due to acute blockage of the coronary arteries. The blockage that occurs is largely due to the rupture of atheromatous plaques in the coronary arteries, which is then followed by thrombosis, vasoconstriction, inflammatory reactions, and distal microembolization. Sometimes this acute blockage occurs due to coronary artery spasm, embolism, or vasculitis.[1] AMI is also caused by atherosclerosis in the coronary arteries which blocks blood flow to the heart. Atherosclerosis is a condition in which the coronary arteries are narrowed due to the accumulation of extracellular lipids, the formation of foam cells which can eventually lead to thickening and stiffness of the arteries.[2]

Globally, the epidemiology of acute myocardial infarction (AMI) shows that the incidence of ST segment elevation myocardial infarction (STEMI) has decreased, while the incidence of non-ST

segment elevation myocardial infarction (NSTEMI) has increased. About 3 million people have STEMI, and about 4 million people have NSTEMI globally. Every year, in the United States there are about 650,000 cases of Acute Myocardial Infarction (AMI), while in the UK it is around 180,000 cases.[3] Heart sufferers in Indonesia are 16.8 million, with an age division of 15-35 years around 1.44 million, 36-44 years old around 6.55 million, and age 45-65 years around 6.88 million. The highest prevalence of heart disease is in the provinces of North Kalimantan at 2.2%, Yogyakarta 2.0%, and Gorontalo 2.0%.[4] Based on health data from the province of Central Java, there were 42.854 cases of heart disease (4.54%) ranking the fourth of all cases of non-communicable diseases. While the second rank of 16.42% experienced DM.[5] The incidence of STEMI at the Central General Hospital Dr. Kariadi was found to be more prevalent in men, namely 126 cases (67.02%) compared to women, which only had 62 cases (32.98%). The mean age of women (60 years) is older than the average age of men (45 years), the youngest age is 40 years for women and 22 years for men.[6]

Typical signs and symptoms experienced by AMI patients are retrosternal chest pain such as squeezing, pressing, stabbing, heat or being crushed by heavy objects. Pain can radiate to the arm (usually the left), shoulder, neck, jaw and even to the back and epigastrium. Pain may last longer than angina pectoris and is unresponsive to nitroglycerin. Pain can be accompanied by feelings of nausea, vomiting, shortness of breath, cold sweat, palpitations or syncope[7]. Pain caused by a sudden decrease in coronary blood flow following occlusion thrombus plaque atherosclerotic a preexisting thrombus Coronary artery vascular injury.[6]

Pain management must be done as soon as possible to prevent sympathetic nerve activation, because sympathetic nerve activation can cause tachycardia, vasoconstriction, and increased blood pressure which in the later stages can increase the burden on the heart and expand the damage to the myocardium. The purpose of pain management is to reduce the heart's oxygen demand and to increase the oxygen supply to the heart.[8] Appropriate pain management should include both pharmacological and non-pharmacological. Nursing Independent interventions include in non-pharmacological with kind of treatmen is relaxationBenson relaxation.[9]

Benson relaxation isdiverting attention to relaxation so that the client's awareness of the pain is reduced, this relaxation is done by combine the relaxation provided with the client's beliefs.[10] This relaxation leading to decrease in the activity of the sympathetic nervous system which can eventually dilate the arteries slightly and improve blood circulation which can then increase oxygen transport to all tissues so that pain can be reduced.[11] Benson relaxation is not only used to reduce chest pain in AMI patients, but Benson relaxation can be used to reduce pain in other cases of pain. Research in Iran, 64 patients who underwent surgery with general anesthesia Benson relaxation effectively reduced postoperative pain.[9] In addition to a study in Egypt, 100 patients with postoperative knee and hip joint replacement, Benson relaxation is effective for reducing pain at night and improving sleep quality.[12] Likewise, a study in Tehran Iraq in 2020, 93 patients who underwent Benson's relaxation laminectomy surgery effectively reduced postoperative pain.[13] Research conducted at Harapan Kita Hospital showed that the combination of Benson relaxation and analgesic therapy was more effective in reducing chest pain.[14] This is in line with research conducted in the ICU room, Benson relaxation intervention for 30 minutes 2 times a day, effectively reduces chest pain in patients with Acute Coronary Syndrome.[15]

Based on the author's observations while working in the ICU RSUP dr. Kariadi, the intervention to reduce pain in AMI patients

is to use pharmacological therapy, such as oxygen, nitroglycerin, clopidogrel, ISDN, aspirin and analgesics if needed. Therefore, the authors want to apply Benson relaxation therapy as a complementary therapy so that pain can be reduced more effectively, but Benson relaxation has not been included in the list of Standard Operating Procedures Dr. Kariadi Semarang. So, the author wants to apply the Benson relaxation technique to reduce pain in AMI patients who are treated in the ICU of dr. Kariadi Semarang.

METHOD

The study designis case study with a descriptive nursing process approach from assessment to evaluation by applying Benson relaxation to reduce pain scale in AMI patients. The subject of this case study is an IMA patient who experiences chest pain at dr. Kariadi Semarang in January 2022. The case study subjects were 2 patients with inclusion criteria: diagnosed by AMI on the ICU first day admission, pain scale above 4 (NRS), Muslim religion, age of patients over 50 years. Exclusion criteria: experience oxygensaturation below 90%, respiration rate more than 30x/minute, consciousness score less than 13. This case study was conducted from January 24 to January 25, 2022 in the ICU Room of Dr. Kariadi Hospital. Purposive sampling were used by assement patient at fisrt admission, appropriate data will take as a sampel. Pre and Post pain scale measure with the Numeric Rating Scale (NRS) with score 1 to 10. This case study begins by conducting an assessment to obtain comprehensive patient data,problem has determined in appropriate patient. Patient got explained about the study and asked for opinion. Intervention delivered after patient sign the inform concent.

The procedure for the Benson relaxation technique are put patient in comfort position such as supine or semifowler. Nurse ask pastient to close the eyes, then relaxation and feel it flowing from toes to face. Instruct patient to inhale through the nose and then exhale through the mouth slowly and comfortably. While exhaling say Astaghfirullah, repeat it during 30 minutes continously. In the end procces your eyes slowly, do this activity at least once a day

RESULTS

The results of the study conducted on January 24, 2022 in case 1 obtained general data: Name of patient Mr.P, age 52 years, male gender, self-employed occupation. Weak general condition, composmentist consciousness. Subjective data obtained by the patient said that the chest pain radiated to the back, the pain was like heavy object with an NRS 5 pain scale, the pain lasted about 1 minute and repeated. Objective data obtained were BP 169/105 mmHg, HR 72 bpm, RR 20 rpm, T 37.00C, SpO2 99%, ECG results showed ST elevation in lead III and AVF, laboratory results for CKMB 27 mcg/l, patient was grimacing. The patient has received therapy from the Emergency Departments at 08.00 WIB infusion of Nacl 0.9% 10 tpm, oxygen with a 6l/m mask, ISDN 5 mg Sub lingual/24 hours, Bisoprolol 2.5 mg Oral (PO)/24 hours, Sprinolactone 25 mg PO/24 hours, Captopril 6.25 mg PO/24 hours, Lactulac 15 cc PO/24 hours, Tikagrelor 180 mg PO, Aspilet 160 mg PO/24 hours.

In case II, an assessment was carried out on January 24, 2022, general data obtained: Name of patient Mr.S, age 59 years, male gender, self-employed occupation. Weak general condition, composmentist consciousness. Subjective data obtained by patients said chest pain, pain like being squeezed with a pain scale of NRS 5, pain lasted about 30-50 minutes and repeated, the body felt weak. The objective data obtained were BP 154/98 mmHg, HR 92 bpm, RR 18 rpm, S 36.8C and SpO2 98%. The results of the ECG examination showed ST elevation in leads II, III and AVF, the results of the CKMB laboratory examination were 37 mcg/l, the patient was grimacing. The patient has received therapy from the ER at 15.00 WIB infusion of NaCl 0.9% 20cc/hour,

Lansoprazole Inj 30 mg/12 hours, Arixtra Inj 2.5 mg/24 hours sc, Aspilet 160 mg Oral (PO)//24 hours, Ramipril 2.5 mg PO/24 hourly, Amlodipine 10 mg PO/24hr, ISDN 5 mg Sub lingual/24hr, Tikagrelor 180 mg PO/24hr, laksadinesyr Cth/24hr.Based on the results of the study above, it was found that both patients were male, aged over 50 years, had the same main complaint, chest pain on an NRS 5 scale, and both patients received oxygen therapy, nitrates, aspirin and hypertension therapy.

The formulation of the main nursing diagnosis for the two patients was acute pain related to physiological injury agents. The definition of acute pain is a sensory or emotional experience associated with actual or functional tissue damage, of sudden or slow onset and of mild to severe intensity lasting less than three months [16]. Characterized by the presence of major data from both patients said chest pain, the patient grimaced, and increased blood pressure.

The nursing plan for both patients refers to the standard of nursing outcomes that are carried out after the nursing process is carried out for 2 x 24 hours, it is expected that the level of pain will decrease and pain control will increase with the criteria for the results of not complaining of pain, not grimacing, improving blood pressure, reporting pain is controlled and able to use non-pharmacological techniques.[16] The planned interventions are observation (Identify location, characteristics, duration, frequency, quality, pain intensity, identifypain scale), therapeutic (Give non-pharmacological techniques of Benson relaxation to reduce pain), Education (Explain strategies to relieve pain and teach Benson relaxation techniques) to reduce pain and collaboration for administration of oxygen, nitrates, aspirin and analgesics.

The first implementation of patient 1 was carried out on January 24, 2022 at 16.00 by examining the patient first, the patient's subjective data said he was still in pain with

an NRS scale of 5,and objective data was BP 154/98 mmHg, HR 92 bpm, RR 18 rpm, S 36, 80C and SpO2 98%, the patient's face looks grimacing in pain, at 16.15 the author teaches the Benson relaxation technique after the patient does Benson relaxation for 30 minutes then an evaluation is carried out at 17.00. : 160/98mmHg, HR: 90bpm, RR: 22rpm.In the second case, it was carried out on January 24, 2022 at 19.00 by conducting an assessment first, obtained subjective data from patients complaining of pain on a scale, NRS pain 5, objective data BP: 154/98mmHg, HR: 89 bpm, RR: 22rpm, 19 hours 15 taught the Benson relaxation technique the same as patient case 1, after that it was evaluated at 19:45 with subjective data the patient said pain was reduced on the NRS 4 pain scale with objective data BP: 147/90mmHg, HR: 85bpm, RR: 21rpm.

The second implementation in case 1 was carried out on January 25, 2022 at 06.00, providing therapy with ISDN 5 Mg, Bisoprolol 2.5 mg, Sprinolactone 25 mg, Captopril 6.25 mg, Lactulac 15 cc PO, Tikagrelor 90 mg PO, Aspilet 80 mg, then do a reassessment at 19.00, the subjective data obtained by the patient saying he was still in pain with an NRS scale of 2, and objective data for BP 138/83 mmHg, HR 87 bpm, RR 20 rpm, S 36.80C and SpO2 98%, at 19.15 the patient asked to do Benson relaxation. At 19.45 an evaluation was carried out, the patient's subjective data said the pain was reduced, with the NRS pain scale 1, the objective data was BP: 132/79mmHg, HR: 83bpm, RR: 18rpm, the patient looked calm and relaxed. Implementation in case 2 was carried out on January 25, 2022 at 12.00 providing therapy Inj Lansoprazole 30mg/12 hours, InjArixtra 2.5mg/24hours sc, Aspilet 80 mg Oral (PO)//24hours, Ramipril 2.5mg PO/24 hours, Amlodipine 10 mg PO/24 hours, ISDN 5 mg Sub lingual/24 hours, Tikagrelor 90 mg PO/24 hours, laxadinesyr Cth/24 hours, then reassessed at 20.00 obtained subjective data the patient said he was still in pain with the NRS 3 scale, objective data for BP:

142/88mmHg, HR: 89 bpm, RR: 22rpm, at 20.15 the patient was asked to do Benson relaxation, at 20.45 an evaluation was carried out, subjective data of the patient said the pain was reduced, with a pain scale of NRS 2, objective data BP: 137/92mmHg, HR: 80bpm, RR:16rpm.

The results of the implementation carried out by the author, the pain of the two patients decreased, indicated by the patient saying that the pain was reduced, the patient's blood pressure fell, the pulse frequency fell, and the breathing frequency also decreased. The evaluation results showed a decrease in pain. Both patients experienced moderate pain before the intervention, (NRS 5), after the intervention decreased to mild pain, (NRS 2 in patient 1 and NRS 1 in patient 2) which are presented in the graph below.
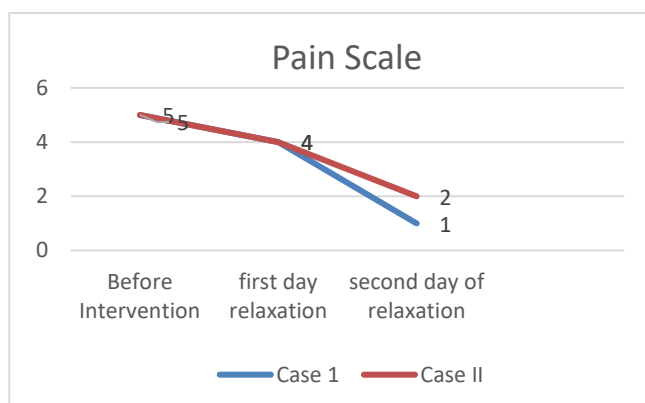
Graph 1

Pain scale of AMI patients with Benson Relaxation in the ICU (n=2)

DISCUSSION

The results of the demographic assessment Data obtained from patients 1 and 2 are male, aged more than 50 years and have a history of hypertension. Broadly speaking, the risk factors forAMI are divided into two groups based on whether they can be modified. Risk factors that canbe improved or modified include hypertension, hypercholesterolemia, dyslipidemia, smoking, obesity, diabetes mellitus, lack of physical activity, stress, and lifestyle. Risk factors such as age, gender, race and family history of disease are factors that cannot be changed[1]. This is like a previous study conducted by Muhammad, et al, which stated that the incidence of acute myocardial infarction with ST-segment elevation at RSUP dr. Kariadi in 2017, the highest incidence of STEMI in men included in the elderly category, which was as many as 85 cases. The risk of coronary atherosclerosis increases with age. Serious illness rarely occurs before the age of 40. Other risk factors can still be changed, so that it has the potential to slow down the atherogenic process. All types of coronary heart disease including STEMI that occur in the elderly have a high risk of death and adverse events.[17]

In patients with hypertension, there is an increase in the concentration of angiotensin II. Angiotensin II is a potent vasoconstrictor and contributes to atherogenesis by stimulating smooth muscle growth. This occurs through binding of angiotensin II to specific smooth muscle receptors that activates phospholipase C. This activation increases intracellular calcium and smooth muscle contraction. Another effect is an increase in lipoxygenase activity which can increase the inflammatory response and LDL oxidation. ECG investigations there is ST elevation in lead II and avf abnormal ECG images appear because of ischemia in the heart muscle that occurs in the inferior region of the heart, as well as increased CK-MB enzyme values as a biomarker of cardiac necrosis, this is in accordance with the theory which in Investigations of AMI patients will get abnormal features on the ECG and an increase in the CK-MB enzyme.[1]

Both patients received oxygen therapy, ticagrelor, nitrates, aspirin. Ticagrelor therapy competitively and irreversibly blocks the adenosine diphosphate (ADP) P2Y12 receptor. Adenosine diphosphate binding to the P2Y12 receptor induces a

change in platelet size and temporarily attenuates platelet aggregation. Ticagrelor has an onset of action 30 minutes after oral administration. The time to reach peak levels is obtained in different ranges from several studies, where ticagrelor is 1.5 hours, ticagrelor has a half-life of 7 hours. ISDN is a nitrate preparation that has an ISDN duration of action ranging from 1 to 2 hours, while the duration of action of sublingual nitroglycerin is only 20-30 minutes. Aspirin works by inhibiting the cyclooxygenase enzyme thereby inhibiting the production of thromboxane A2 (TXA2). Peak blood levels 1 hour after drinking. (National Drug Information Center of the Indonesian National Drug and Food Control Agency 2018). In patients 1 and 2, the implementation of Benson relaxation was carried out 7-8 hours after giving pharmacological therapy, this was intended so that there was no confusion about effectiveness in reducing pain in AMI patients, after the duration of drug action was reduced or lost, Benson relaxation as a companion therapy can help in reducing AMI patient pain. This is in line with the research conducted by Sunaryo (2014) on "The Effect of Benson Relaxation on Reduction of Left Chest Pain Scale in Acute Myocardial Infarct Patients. The combination of Analgeticc and Benson Relaxation therapy has more effect on reducing pain scale in patients with Acute Myocardial Infarct compared to analgesic therapy alone. Benson relaxation intervention for 30 minutes 2 times a day, effectively reduces chest pain in patients with Acute Coronary Syndrome.[18]

Patient I pain scaoe decreased more than patient 2, it is may everyone's perception of pain threshold is different.[18] Everyone has a different meaning in viewing the pain response, both at different times in the same individual or with the same complaint. Some individuals have a positive response and are faster than other individuals, it depends on the condition and the individual's interpretation of the pain). The second factor is individual tolerance for pain, a person's tolerance related to the intensity of pain to which the individual can respond well or vice versa. The third factor is a limit of a person's ability to adapt and respond to pain which affects a person's behavior, and the fourth factor is age, the difference in a person's age has different influences in viewing pain. Adults usually tolerate pain better, but children have a lower upper pain threshold for discriminating between pain and pressure, whereas older people fail to perceive tissue damage, due to degenerative changes in pain nerve pathways compared to adults. young age.[19]

CONCLUSION

The combination of pharmacological therapy with Benson relaxation is effective in reducing pain scale in AMI patients. The evaluation results obtained a decrease in pain on 3 NRS scales (scale 5 down to scale 2) in patients 1 and 4 on the NRS scale (scale 5 down to scale 1) in patient 2. Suggestions from the author, Benson relaxation can be applied as a complementary therapy in reducing chest pain in AMI patients. Hospitals can make pain management with Benson relaxation a Standard Operating Procedure (SOP), and nurses can develop further related to non-pharmacological therapy to reduce exposure to pharmacological therapy.

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