

EFFECTIVE CARE AND MANAGEMENT OF MYOCARDIAL INFARCTION PATIENT IN CORONARY CARE UNIT AT CLARA SWAIN HOSPITAL, BAREILLY, UTTAR PRADESH

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Received: 12 Aug 2021

Accepted: 18 Aug 2021

Published: 23 Aug 2021

ABSTRACT

Hospital: Clara Swain Hospital was established in 1870 in Bareilly by Dr. Clara A. Swain, the first women medical missionary who came to the orient. She established this as a first Hospital for women and Children in Asia. In 1940 this Hospital was expanded into a General Hospital, which are now 300 bedded.

KEYWORDS: Hospital, Patient, Effective Care

INTRODUCTION

Physical Setup of CCU: - The CCU contains 7 beds. The unit is air-conditioned and well equipped. The nursing station contain central monitoring system with separate 7 monitors at the bedside of the patient each patient is supplied by the separate equipment such as kidney tray, bedpan, urinal pan. The unit is supplied by the artificial respiration machine, defibrillator and refrigerator to store the essential and costly drugs. There is central suction system near each bed and 4 oxygen cylinders. **Life Pattern of MI patient in CCU includes** -Sedentary, Fast life, Stressful life. **Diet Pattern of MI patients usually includes** - Rich in oil, Rich in carbohydrate, Rich in cholesterol containing food such as meat, egg, cheese, butter, dry fruits, etc., Rich in alcohol, Excessive smoking.

Definition of Myocardial infarction- Blood clot (thrombus) blocks vessel supplying the heart, leading to inadequate blood supply and death of muscle tissue. Pain or tightness in center of chest may radiate to arms, throat, or jaw. Patient may be white and perspiring, blood pressure may fall and pulse may be rapid and shallow.

Myocardial infarction refers to the process by which myocardial tissue is destroyed in region of the heart that are deprived of their blood supply because of a reduced coronary blood flow.

OBJECTIVES

- To Manifest the Love of God through service of the Hospital.
- To implement in every day, work the concept that we are instruments in the hand of Jesus Christ.
- To make available to the public irrespective of race, religion, social status, the service of the hospital in the field of preventive, curative and educational activities of health care.
- To provide training research programmes and facilities to doctors, nurses and paramedical and all other workers engaged in health care activities.

- To participate as circumstances may warrant in activities designed and carried out to promote the health and development of local communities, etc.

NEED OF THE STUDY

Due to Following Reasons

- Inadequate Nursing personal in coronary care unit.
- Inadequate modern necessary equipment for diagnostic tests e.g. trade mill test and Doppler test.
- Inadequate latest knowledge about myocardial diseased condition and management.
- Cardiac rehabilitation center is not available.
- Inadequate qualified nursing personal in coronary care unit. (Staff is not given opportunity to take specialization course in coronary care.)

PURPOSES

- To acquire the extent information in effective care and management of myocardial infarction patients.
- To gain deeper and broader knowledge about myocardial infarction.
- To learn how to write term paper in organized way.
- To know what are the latest diagnostic tests done in myocardial infarction.
- To know what are the medication given to patient for the treatment of myocardial infarction.
- To learn cardiac rehabilitation programme.

RESEARCH METHODOLOGY

Quasi experimental with control group research design.

HYPOTHESIS

- **H1:** There is a significant increase in the knowledge regarding life style
- **H2:** There was no significant association between age, gender, education, occupation and religion.

REVIEW OF LITERATURE

Stress

S. Srinivasan wrote that Hans Selye has done the most work in the effect on man. His research lab at the University of Montreal is on international centre for stress research. He has described the G.A.S. (general adaptation syndrome) in three phases i) the alarm reaction, ii) the stage of resistance and iii) the stage of exhaustion. Most illnesses occur in stage three. During every illness we are in one of these three phases of stress and to regain our health, our diets must be planned accordingly.

Hans Selye further says that stress is good and needed for people to grow to their full potential. When stress increases the problem occurs. He calls optimal stress level, Distress and this reaches a maximal point where stress increases health and performance he calls overload, distress, where stress increases. To reduce the stress some simple exercises are needed.

Dr. S.C. Manchanda said that there is a strong relationship between stress and mental tension and heart attacks. People who worry too much and who are always in hurry can get high blood pressure and more heart attacks.

Behavior

Morris, nurse clinician, describes her experience that myocardial infarction clients who participate in behavioral based treatment programme have fewer re-infarctions and demonstrate more type ‘A’ behavior change than those in the control group.

Frustration

Charles, G Edwards stated that Drs Friedman and Rose man says, that as the frustration begin, blood pressure mounts and heart output increases along with this there is decreased resistance to blood flow. As the frustrations increase, an ominous change is noted. As blood pressure raises, resistance suddenly increases and the heart makes futile effort to supply blood to a system that objects to the increased flow.

Smoking

Dr. S.C. Manchanda said, that scientific studies have shown that heart attacks are more common in people who smoke, particularly people who smoke heavily, and that death rates due to heart attacks are higher in smokers.

Dr. K.C. Chopra says that in Delhi alone, nearly a quarter million in the age group of 25-64 are suffering from coronary heart diseases leading to heart attack and a majority of them are smokers.

Alcohol

Bernard, Kinman says that, the “beer drinker’s heart” is the name often given to a degeneration of heart muscle tissue – a condition caused by alcohol. The heart muscle as a result, becomes weakened the heart muscle cells fill the fluid and a “fatty heart” develop.

Diet

Dr. G.S. Relwani says that, a “Prudent diet” for prevention of atherosclerosis recommended by the American heart association in a follows adapt diets that are low in cholesterol, not only by those who have high cholesterol but by the entire population to reduce the risk of heart disease, the number one killer in the world. 10 percent reduction in cholesterol level will reduce 20 percent incidence of heart attacks.

Dr. G.S. Relwani says that the main three factors increase the chances of getting an heart attack by 10 times or more namely cholesterol, smoking and hypertension combined.

Hiroshi Nakajima says that, wrong diet, lack of exercise, cigarette smoking, and stress all contribute to cardiovascular disease. Healthy behavior must start from birth. Thus the disease and disabilities that prevent many of us from reaching old age in good health can be delayed or avoided.

V. Bhaskaran says that, cholesterol is a necessary component of the human body. It is a fatty waxy substance that's a basic structural component of cell wall and different hormones, especially the sex hormones and steroids. Only 5% of cholesterol actually circulates in the body, and that 5% is what can build up in is arteries and lead to cardiovascular disease.

Atherosclerosis

Maryanne Wagner et al (Editor), writes that when a clot forms at the site of an atherosclerotic plaque in the coronary artery lumen MI usually occurs. Intense spasm of a coronary artery may also cause an MI. If blood flow is completely obstructed beyond the clot or spasm, myocardial function will be compromised almost immediately, possibly resulting in tissue necrosis.

Hypertension

Maryanne Wagner et al (Editor) writes, that hypertension is the most common cause of left – sided ventricular failure. Although more than half of all patients who have an M I will also develop it.

Diabetes

Nikolai, Khaltsev says that WHO estimated that there are at least 50 million diabetes in the world. These persons are at high risk of hypertension and other cardio-vascular diseases.

Life Style

Eilif Liisberg (Editor) wrote that, through the world and at every social, economic and cultural level, certain risk factors associated with our chosen- life style can lead to chronic diseases which we call now – communicable. Detailed studies confirm that these factors include an unhealthy diet, Lack of exercise, smoking, drinking too much alcohol, stress and air pollution, cardiovascular disease arise due to too rich fats and sugar in diet, as from lack of exercise or the stress of modern living.

Diagnostic tests

Vickie, A. Miracle says that, left ventricular MIs are usually easily diagnosed by E.K.G findings, cardiac enzyme testing, and echo cardiography. Pulmonary artery catheterization is generally used only with complication.

Maryanne Wagner et al (Editor) writes, after you have inserted an I.V Cannula for a suspected MI patient, draw Blood for creatine phosphokinase (CPK), lactic dehydrogenase, and aspartate aminotransferase (SGOT) levels. The CPK isoenzymes CPK- MB gives the best enzymatic evidence of MI.

FINDINGS

Myocardial infarction refers to the process by which myocardial tissue is destroyed in region of the heart that are deprived of their blood supply because of a reduced coronary blood flow.

Laboratory Findings

Clinical history and findings from physical examination, X. Ray chest, E.C.G. with long lead II, Blood tests, Myocardial Scintigraphy, Echocardiography, Ambulatory Electrocardiographic Monitoring, Exercise stress test, Phonocardiography, Vectorcardiography, Fluoroscopy, Angiocardiology, Cardiac Catheterization.

Treatment and Management:

Objective of MI Management Includes: To maintain adequate circulatory function to prevent death from arrhythmia, asystole, and cardiogenic shock. To limit the size of the infarct. To provide healing for the myocardium. To facilitate rehabilitation.

Immediate Treatment of MI

The patients are best treated in a special coronary care unit equipped with continuous monitoring, alarm, recording, pacemaker, and resuscitation equipment and with nurses and physicians who are specialized in cardiovascular problems especially in MI (CCU).

Rest

Physical and mental rest in the most comfortable position is essential during the first 2-3 weeks. The patient should not allow to feed or care for himself during the first few days unless the attack is mild, without shock or other complications.

Analgesia

When pain is severe, give morphine sulfate 5-10 mg slowly i/v. If the pain is not relieved in 15 minutes, repeat this dosage. Start i/v infusion running slowly to keep vein patent.

Oxygen

Is often useful and sometime necessary for the relief of dyspnea, cyanosis, pulmonary edema, shock, chest pain.

Anticoagulant Therapy

Is a controversial matter in the milder cases (rapid relief or pain, minimal signs of myocardial necrosis absence of shock or cardiac failure) in severe cases of myocardial infarction, anticoagulants are generally recommended. Such drugs are heparin, streptokinase and a recent drug which is costly but more effective is alteplase.

Other Drugs

- Propranolol
- Disprin
- Ascorbic acid
- S.D.N. (Iso-sorbidedinitrate) sorbitrate.
- Digoxin to treat Arterial fibrillation

The patient must not be allowed to strain on stool. Suppository or small enema may be preferable.

Nursing Management (Care in Critical Stage)

- Admit patient to cardiac care unit.
- Place the patient into comfortable position.
- If patient is very restless start oxygen therapy stat. mostly M I patient require oxygen.

- Send the blood (cardiac enzymes) for test before starting the i/v fluid.
- Start i/v fluids 5% dextrose solution or saline slowly.
- Attach E.C.G. monitoring.
- Measure and record vital signs.
- Take E.C.G. with long lead II.
- Assess for changes in mental status.
- Administer the drugs as ordered.
- Evaluate urine output, & keep an accurate intake and output.
- Relieve patients' pain and anxiety.

Nursing Care to Support Patient Activities

- Diet (depend on patients' circulatory status).
- Clear liquids and progressive diet.
- Restrict sodium (250 mg).
- Restrict coffee and cola, caffeine can affect heart rate.
- Early ambulation.

Rehabilitation of Patient

Four Important Sub- Goals of Rehabilitation Are:

- To develop a programme of progressive physical activity.
- To educate the patient and family concerning cause, prevention and treatment of disease.
- To help the patient accept the limitations imposed by illness.
- To aid the patient in adjusting to change in occupational goals.

Patient should be kept oriented such as with a calendar, clock, and window in the room.

Health Education

Objective

To restore patient to his optimal physiologic, psychologic and work level.

To aid in restoring confidence and self-esteem.

To prevent progression of underlying disease (atherosclerosis).

Explain the patient about what has happened to his heart.

- A myocardial infarction may require some modification of life style.

- Exercise tolerance testing will be done after myocardial healing.
- A programme of exercise training will be prescribed.
- Walk daily, slowly increasing the distance and time.
- Rest after meals and before doing any exercise.
- Avoid tenseness and rushing.
- Avoid working with arms above shoulder level.
- Avoid large meal, should take 3-4 times meal in same amount.
- Coffee cola and cigarettes must be avoided.
- If pain occurs take nitroglycerine immediately.
- Sexual relaxations may be resumed upon advice of physicians usually after exercise tolerance is assessed.
- Instruct patient to notify the physician, when the following symptoms appear:-

Chest pressure or pain not relieved in 15 minutes.

Shortness of breath.

Unusual fatigue.

Swelling of feet and ankles.

Fainting dizziness.

Very slow or rapid heartbeat.

- Explain pharmacologic regimen to the patient.

RESULTS AND DISCUSSIONS

Most of the M1 patients come in coronary care unit because of lack of health teaching and guidance, with repeatedly heart attack. Most of the patient who hold the high administrative post, and responsible jobs. They unknowingly become type ‘A’ personality.

RECOMMENDATIONS

- I recommend that the nursing personnel get opportunity to take specialized course in coronary care.
- I recommend that there be additional four specialized staff nurses for the care of the patient in the C.CU of 7 beds.
- I recommend that there be modern equipment and tests available in our hospital.
- I recommend to my administrator for opening of the cardiac rehabilitation centre.
- I recommend that the nursing personnel get adequate knowledge about M1, that they can give effective health teaching to the patients to prevent repeatedly heart attacks.

IMPLICATION

Nursing Practice

- The nurse is reliable for proper management of MI in CCU in harmony with legislative regulations, nationwide standards and provincial protocol.
- Adequate knowledge and skills should be given in performing care appropriately.
- Nursing professionals can assess risk aspects, and can clear the doubts and correct the misunderstanding.
- Nurses can develop educational training programme to enhance knowledge regarding MI Management.

Nursing Education

- Deficiency of knowledge may furthermore restrict nurses from conveying preventive advice.
- Education is mandated to improve consciousness of MI.
- With proper knowledge, Nurses can concentrate effectively on assessment, symptoms management, education, and supportive care.

Nursing Administration

- Nursing administrator establishes and encourages varieties of skills in nurses.
- Nursing administrator can manage continuous educational training as per need of patients/ nursing staff; and can manage sufficient funds to support sound programmes.

Nursing Research

- Cardiology nurse can work as data manager for cardiothoracic research studies.
- The research in practice help cardiology nurses to improve quality of care and make effective decisions.

CONCLUSIONS

The present term paper has been attempted to gain deeper and broader knowledge about myocardial infarction, its latest diagnostic tests and treatment.

In my hospital most of the MI patients come in coronary care unit because of lack of health teaching and guidance, with repeatedly heart attack. Most of the patient who holds the high administrates post, and responsible jobs. They unknowingly become type 'A' personality.

In February 1989 research was done, in Delhi alone 2.5 lakh people Between 25 to 64 year are suffering from ailments which could lead to heart attacks. The study indicates that most of the heart diseases are caused by adopting the wrong life-style. Even people who are doing stressful job can prevent themselves from heart diseases by practicing muscle relaxation therapy, doing regular light exercise, meditation, walking, jogging, cycling, going for picnic, shopping, recreation and forming good habits.

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