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Research Article

Myocardial Infarction with Alcoholism: A Clinical Case Study from Medical ICU of Sher-i-Kashmir Institute of Medical Sciences Soura Srinagar

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I N F O

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I N T R O D U C T I O N

As a part of our clinical experience in advanced nursing practice, we were posted in Medical ICU of SKIMS hospital, Soura Srinagar Kashmir. Thereby, as a requirement to study medical cases, I selected a patient namely Ahmad (Name Changed) diagnosed with a condition Myocardial Infarction with known history of Alcoholism for my case study.

Biographic Information

Name: Ahmad

Age: 44 years

Sex: Male

Ward: MICU

Address: Srinagar, J&K

Religion: Islam

M.R.D. No: XX24503

Income: 25,000/month

Occupation: Shopkeeper

Languages: Kashmiri, Urdu

Educational Qualification: 10th

Name of the Attendant/ Family Members: Mrs. Haseena (Name Changed)

Relationship with the Client: Wife

Socio Economic Status: Middle class

D.O.A: 24-07-2019

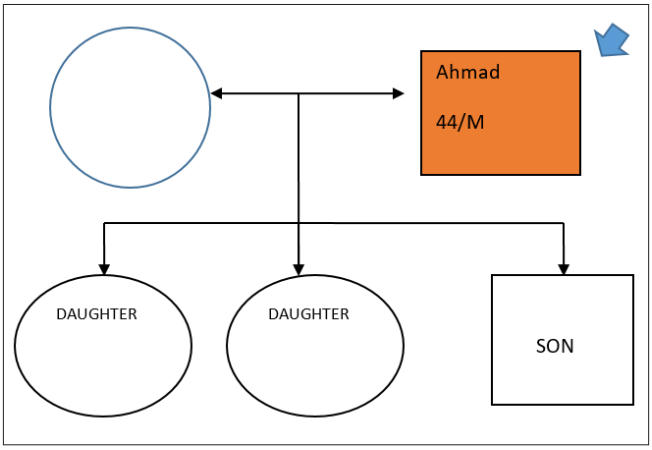
Diagnosis: Myocardial Infarction with ventricular fibrillation

Family Composition

Family Type: Nuclear family

No. of Family Members: Six (5)

Family Tree



Reason for Hospitalization

Ahmad was admitted with the complaint of Shortness of breath, loss of consciousness, restlessness and fecal/ urinary incontinence.

Present Complaints

At present patient has moderate pain, palpitations and bradycardia.

Past History of Illness and Hospitalization

There is no such/relevant history of past illness, surgeries or any major illness.

No history of any allergies or intake of any previous medications.

Family History of any Illness

Bhat Manzoor Ahmad has family history of hypertension, diabetes, cardiovascular diseases.

Dietary Details

Veg/ Non-Veg: Both

Alcohol: Heavy drinking 6 packs a day, three in the morning and 3 in the evening.

History of any Allergy: Nil

Activity: Bed ridden and on monitors, perform assisted activities, if done for a longer time feels palpitations and sweating.

Cognitive: He is mentally alert, conscious, well oriented to persons, but is irritable.

Rest and Sleep: Good

Role/ Relationship: Disturbed because of alcohol abuse.

Coping Stress: Yelling at wife

Environmental History

As per the information provided by Mrs. Haseena, wife of the patient this includes:

Drinking Water Supply: Tap water

Environmental Sanitation: Poor

Waste/ Excreta Disposal: Open drainage

Presence of Flies/ Mosquito/ Rodents: Present

Psychosocial History

Language: Kashmiri/ Urdu

Milestones Development: Normal

Social Support Available or Not: Yes

Physical Examination

Mental Status: Conscious oriented to time, person and place

Body Development: Well built

Nutritional Status: well nourished

Dress: Well dressed

Speech: Reserved/ talks less

Hygienic Condition: Good

Vital Signs

Days	Temperature	Pulse	respiration	Blood pressure
Day 1	98.6 F	58 bpm	22 pm	150/ 90mm Hg
Day 2	99 F	70 bpm	21pm	140/ 80mm Hg
Day 3	99 F	70 bpm	20pm	130/ 80mm Hg

Anthropometric Measurements

Height: 5.6Ft

Weight: 76 kg

Systemic Physical Examination

Head: Clean

Scalp: Clean. No scaling, lesion, or wound or scar

Face: Clean, Sweating, anxious

Eyes

Eye Brows: Symmetrical

Eye Lashes: Normal, even distribution

Eye Lids: normal

Eye Balls: Symmetrical, & not protruding.

Conjunctiva: Pale

Pupil: Equally reacting to-light

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Lens: Transparent

Vision: Normal

Ears: Normal

External ears: No discharge

Hearing acuity: Normal

Nose

External nares: No nasal flaring

Nostrils: Normal

Neck: Normal ROM

Thyroid: Normal, Not enlarged

Systemic Examination

Cardio Vascular System

Palpations: Point of maximal impulse can be felt at 5th intercostal space.

Auscultation: Presence of S1 and S2 sound with irregular and decrease in intensity.

Respiratory System

Inspection: Respiratory rate 22/minute, need oxygen even maintain on 95%.

Palpation: Chest expansion is symmetrical.

Auscultation: Normal breath sounds.

Gastrointestinal System

Inspection: Mild abdominal distention, no lesion and no scar.

Palpation: Mild enlargement.

Percussion: dull sounds.

Genitourinary System

Inspection: Decreased urine output. No abnormal discharge is noted.

Palpation: Normal.

Musculoskeletal System

Inspection: Restricted range of motion.

No rigidity Present: Normal reflexes.

Spinal cord: Body curvature is normal.

Palpation: Muscle strength is normal, no muscle atrophy.

Integumentary System

Skin: Normal

Inspection: Normal

Palpation: Normal

Nail: Short & clean nails

Central nervous system: Conscious, well oriented. G.C.S: 15/15

Motor Function: His motor function is normal.

Sensory Function: Patient has normal sensation to temperature, pain, touch, vibration and position.

Laboratory Investigations

Haemogram

Test	Patient's value	Normal value	Remarks
Hemoglobin	16.7 gm.	12-16	Above Normal
TLC	6.60* 10^3/UI	4.0-10* 10^3/ UI	Normal
Neutrophils	56%	47-63%	Normal
Lymphocytes	32%	24-40%	Normal
Monocytes	5%	4-9%	Normal
Eosinophil's	2.5%	0-3%	Below normal
Platelets	1.34 lakh/ cu mm	1.5-4.5 lakh/cu mm	Normal
MCV	110[f l]	75.0-95.0	Normal

KFT

Urea	29	7-20mg/ dl	Above normal
Creatinine	0.74	0.6-1.2 mg/ dl	Normal

LFT

Bilirubin	1.05	1.2 mg/dl	Normal
ALT	83	7-55 u/l	Above Normal
ALP	174	44-147 iu/l	Above Normal

Electrolytes

Sodium	137/ 138/ 136	135-145 m Eq/l	Normal
Potassium	5.5/ 3.8/ 3.9	3.5-5.0 m Eq/l	Above Normal to Normal
PH	7.39	7.35-7.45	Normal

Special Investigations

ECG: ST elevation MI

Trop T: Positive

LDH: 300 units per liter

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ECHO: Moderate Mitral Regurgitation

Left Ventricular Hypertrophy

Holter: AIVR (accelerated idioventricular rhythm)

Current Medication being Taken

- Oxygen administration @ 5l/Min
- Tab Pantop 40mg OD
- Tab Clopidrogel 75 mg OD
- Tab Aspirin 75mg OD
- Tab Lasilactone 50mg OD
- Tab Amlodipne L OD

About the Disease Condition

Myocardial Infarction (MI), also known as a heart attack, occurs when blood flow decreases or stops to a part of the heart, causing damage to the heart muscle.

The most common symptom is chest pain or discomfort which may travel into the shoulder, arm, back, neck or jaw. Often it occurs in the center or left side of the chest and lasts for more than a few minutes.

The discomfort may occasionally feel like heartburn. Other symptoms may include shortness of breath, nausea, feeling faint, a cold sweat or feeling tired. About 30% of people have atypical symptoms.

Causes & Risk Factors

Book Picture	Patient Picture
Increasing Age	Present
Tobacco/ Cigarettes	Present
Hypertension	Present
Diabetes Mellitus	Not Present
Family History	Present
Sedentary Life style	Present
Obesity/ Increased BMI	Present
Stress	Present
Drug/Alcohol Abuse	Present

Pathophysiology

Endothelial Cell injury and inflammation (alcohol intake >6 packs a day, morning 3 and evening 3)

↓

Plaque Formation (atherosclerosis progression)

↓

Plaque rupture and thrombogenesis (embolic stroke is tri)

↓

Reduced blood supply and increased oxygen demand

↓

Myocardial Ischemia

↓

Myocardial cell necrosis

↓

Acute Myocardial Infarction

Clinical Manifestation

Book Picture	Patient Picture
Nausea	Present
Vomiting	Not present
Indigestion	Not present
Heart burn/ Abdominal pain	Not present
Shortness of Breath	Present
Cold Sweating	Present
Palpitations	Present
Arrhythmias	Present
Hypertension	Present
Levine's Sign	Not present

Diagnostic Evaluations

Book Picture	Patient Picture
History of illness	Done
Physical examination	Done
Trop-T	Done
Blood examination	Done
Chest X-ray	Done
ECG	Done
Coronary angiography	Not done
Cardiac CT/ MRI	Not done
Holter monitoring	Done

Complications

Book Picture	Patient Picture
Death	Not present
Arrhythmia	Present
Rupture of ventricular wall	Not present
Tamponade	Not present
Heart failure	Not present
Valve disease	Not present
Aneurysm of Ventricle	Not present
Dressler's syndrome	Not present
Embolism	Not present
Recurrence/ Regurgitation	Present

Management

Medical Management

- Oxygen administration @ 5l/Min
- Tab Pantop 40mg OD
- Tab Clopidrogel 75 mg OD
- Tab Aspirin 75mg OD
- Tab Lasilactone 50mg OD
- Tab Amlodipne L OD

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Name of the Drug	Pharmacological Action	Dosage	Route	Indication	Side Effects	Contrain-dications	Nursing Responsibility
Tab Pantop	Is a proton pump inhibitor that decrease the production of acid in the stomech	40mg OD	Oral	Triple oral antithrombotic therapy	Dizziness, Headache, nausea	Hyper-sensitivity	Monitors for adverse reaction
Tab Clopidrogel	Is an antiplatelet medication. This drug isused to prevent platelet aggregation thereby prevent clot formation in blood stream	75 mg OD	Oral	Prevent heart attack, stroke, lower complications of MI	Headache, Nausea, Diarrhoea, Increased Bleeding	Hyper-sensitivity and pathological bleeding disorders	Monitors allergic reaction, bleedung tendency, bruises and side effects
Tab Aspirin	Is a NSAID which inhibits the activity of cyclooxegenase which prevents inflammation, swelling, pain and fever	75 mg OD	Oral	Cardiovascular disease, Ischemia, STEMI	Rash, GI distur-bances, Abdominal pain, Heartburn	Hype-rsensitivity, increased bleeding tendency, Ulcers, NSAID toxicity	Monitors any sign of bleeding, ecchymosis, provide adequate fluids to client
Tab Amlodipne L	Contains amlodipine & losartan Is an anti-hypertensive drug and sometimes used to prevent chest pain in MI Losartan is used to treat left ventricular hypertrophy	5/50 mg OD	Oral	Hypertension, risk of stroke, heart attack	Stuffy nose, back pain, Diarrhoea, fatigue	Hyper-sensitivity, high grade aortic stenosis, Complete Heart failure	Assesses cardiac status of the patient regularly
Tab Lasilactone	Is a diuretic drug and long acting aldosterone antagonist	50 mg	Oral	Resistant edema, hyperal-dosteronism in CCF	Hyperin-flation if given in excess	Hyper-sensitivity, Impaired renal failure, anuria	Monitors electrolytes of the patient continuously & record

Nursing Management

- Assissts on oduty nursing officers in Administration of all medications as prescribed by the treating cardiologists.
- Monitors the cardiac function by continuously observing monitors for Electricardiogram and other reports particularly ABG
- Continuous Assessment, reassessment of the clients condition & monitoring of vital signs: reporting them to immediate preceptor.
- Continuous monitoring of pulse for rate, rhythm, strength, & regularity.
- Auscultates heart sounds for any abnormality along with precepetor and cardiologist on duty.
- Helps in the maintenance of patent airway and maintaining oxygen saturation above 90%.
- Administers oxygen at the rate at what has been prescribed that is 4 liters per minute
- Provision of appropriate & adequate fluids & nutrition.

Nursing Diagnosis

- Pain related to tissue ischemia as evidenced by chest pain, facial grimacing and restlessness.
- Potential for Ineffective Tissue Perfusion related to reduction of blood flow

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- Activity intolerance related to imbalance between myocardial oxygen supply and demand as evidenced by evidenced by high BP with dysrhythmias
- Self-Care Deficit related to inability to walk as evidenced by sweating and palpitations
- Knowledge deficit related to lack of information regarding myocardial infarction

Nursing Care Plan

Nursing Diagnosis	Objective	Intervention	Rationale	Evaluation
Pain related to tissue ischemia (coronary artery occlusion) as evidenced by chest pain, facial grimacing and restlessness	To relieve chest pain within appropriate time frame To reduce tension, make patient relaxed and ease movement	Documented characteristic of pain, noting verbal reports, nonverbal cues (crying, restlessness, diaphoresis, clutching of chest) and BP or heart rate changes Obtained full description of pain from patient including location & intensity Provided quiet environment, calm activities, and comfort measures. Approach patient calmly and confidently Instructed patient to do relaxation techniques: deep and slow breathing, distractions Administered aspirin as advised and Checks vital signs before and after administring medication	Heart rate, respiration and blood pressure tends to rise due to pain Relaxation techniques distract attention of the patient away from the pain	Patient was comfortable & pain was relieved
Potential for Ineffective Tissue Perfusion related to reduction of blood flow	To demonstrate adequate perfusion by adequate skin warm and strong peripheral pulses, stable vital signs	Investigated sudden changes in consciousness as patient was brought to emergency in unconscious state Monitored respirations, notes work of breathing Encouraged active or passive leg exercises, avoidance of isometric exercises Monitored intake, note changes in urine output	Cerebral perfusion is directly related to cardiac output Cardiac pump failure may precipitate respiratory distress	Respiration of patient remained stable along with pulse rate Patient had good, strong and rebounding pulse beating @ 70 per minute
Activity intolerance related to imbalance between myocardial oxygen supply and demand as evidenced by evidenced by high BP with dysrhythmias	To demonstrate measurable increase in tolerance for activity with heart rate/ rhythm and BP within patient's normal limits and reports absence of angina with activity maintain normal temperature & normal WBC count	Documented heart rate as 60 bpm and BP 130/80mm Hg before, during, and 75 bpm and 150/90 mmHg after activity. Correlates with reports of chest pain or shortness of breath Encouraged rest initially. Thereafter, limit activity on the basis of pain and/ or adverse cardiac response Instructed patient to avoid increasing abdominal pressure Reviewed signs and symptoms reflecting intolerance of present activity level	Patient's response to activity may indicate myocardial oxygen deprivation that may require a decrease in activity level Reduces myocardial workload and oxygen consumption, holding breath can lead to bradycardia and signs and symptom s to be checked to change exercise regimen	Patient began to perform some ADL.

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Self-Care Deficit related to inability to walk as evidenced by sweating and palpitations	To help Patient to perform self-care activities safely	Assessed ability of patient to carry out ADLs like feed, dress, groom, bathe, toilet, transfer, and ambulate on regular basis Assessed patient's need for assistive devices Assisted patient in accepting necessary amount of dependence Encourages independence, but intervenes when patient Assisted patient in accepting necessary amount of dependence Encourages independence, but intervenes when patient cannot walk up to washroom or perform ADLs	Patient's problem area for the patient This increases independence in ADLs performance -may indicate respiratory compromise	Patient began to walk and go up to washroom even suffered from diaphoresis
Knowledge deficit related to lack of information regarding myocardial infarction	To increase knowledge of client and family regarding myocardial infarction	Assessed readiness of family and client to learn about the disease process Explained normal range of pulse, respiration and blood pressure to the client and his family. Asked client to check for warning signs of recurrent MI like palpitations, chest pain radiating to left jaw, loss of consciousness Asked client to keep his blood pressure well controlled by regulating ADL Educated client and his family regarding ill effects of smoking and alcohol abuse and their relation with myocardial infarction Advised himm to visit nearest drug deaddiction centre to get rid off fro the menace of alcoholism Advised client to avoid strenuous activity to avoid aggravation of MI	Patient's acceptance of disease will help in to prevent it from progression Well controlled blood pressure will have a direct bearing on prevention of recurrent MI Strenuous activities should be avoided to decrease myocardial oxygen demand. Smoking and alcohol use cause glucose intolerance, decrease in serum levels of high density lipoproteins and has strong connection with thrombosis	Patient has agreed to cut the alcohol use Patient's wife has agreed to keep a close vigil on pulse and BP of the patient

Application of Nursing Theory

I have selected Dortothea Orem's nursing theory for application of nursing process on my patient with Myocardial Infarction. This theory refers to the series of actions that a nurse takes to meet patient's self-care demands. It is composed of three systems I.e. wholly compensatory, partially compensatory and supportive educative system. I have rendered nursing care based on this theory.

Whollycompensatory System

I have performed ADL of my patient like administration of drugs, Nutritional care, and over all care of patient
He cannot take care of himself as he was anxious and suffered diaphoresis and pain while exertion so I provided his all care needed for health related activities
I have provided care to the patient by respecting all rights of patient and accompanied him during ECG monitoring and drawing a arterial blood sample

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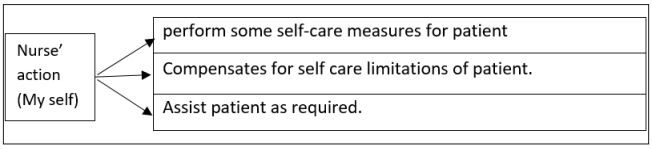
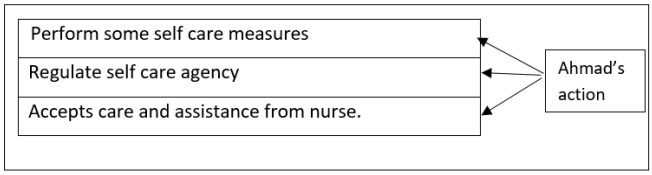
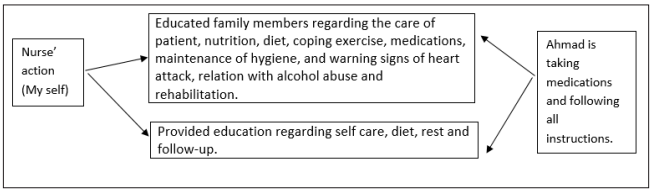
Partially Compensatory System





Supportive Educative System



Health Education to the Patient and Family In MICU

- Encouraged the patient to take adequate bed rest
- Placed the patient in Fowler's position
- Advised the family to give all medications as prescribed, t client at home
- Advised his wife to supervise exercise and activity at home and be with a client till all signs subside
- Encouraged patient to discontinue alcohol use, reduce fat in diet, visit nearest DDC and control weight
- Encouraged patient to stop smoking as it increases chances of recurrent MI
- Encouraged the care givers to have regular follow-ups for provision of better care to the patient
- Educated the care givers to maintain a safe and stress free environment at home & surroundings, so to prevent further infections, & promote healthy living
- Educated the patient about the importance identification of warning signs of heart attack and recurrence of myocardial infarction repost to emergency in case same appear in patient like chest pain, clenched fingers on chest (Levine sign)

Summary

Patient is better, is free from complications, nosocomial infection & pain has been treated and is taking medications regularly. The patient's condition improved day by day and he has been discharged from the hospital.

Conflicts of Interest: None

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