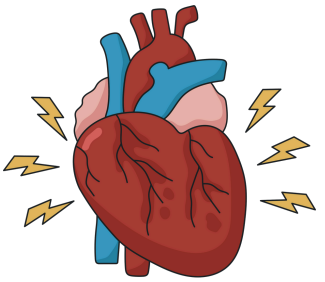
Cardiomyopathy

Overview:

Cardiomyopathy

Cardiomyopathy refers to a disorder that **affects the heart muscle**, **leading to thickening**, stretching, and stiffening, which impairs the heart's ability to pump blood.



Types of Cardiomyopathy

Dilated Cardiomyopathy

Characteristics:

- Rapid degeneration
- Inflammation of heart fibers
- Ventricular dilation
- Atrial enlargement
- Impaired systolic function

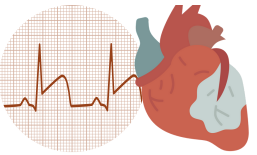
Symptoms:

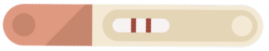
- Fatigue
- decreased exercise capacity
- dyspnea at rest
- orthopnea
- paroxysmal nocturnal dyspnea.

Causes:

- **Cardiotoxic agents:** alcohol, cocaine, doxorubicin
- Genetics
- Coronary artery disease

- Diabetes
- Hypertension
- Myocardial infarction
- Myocarditis
- HIV
- Congenital heart disease
- Pregnancy complications





Hypertrophic Cardiomyopathy

Characteristics:

- Left ventricular thickening
- Reduced ability to pump blood
- Risk of atrial fibrillation
- Heart failure
- Stroke.

Symptoms:

- Syncope
- Exertional dyspnea
- Angina
- Fatigue.

Causes:

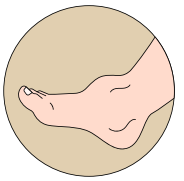
- Often inherited, leading to sudden cardiac death in young adults.

Restrictive Cardiomyopathy

Characteristics:

- Impaired diastolic filling and
- Stretching due to scarring or stiffening.

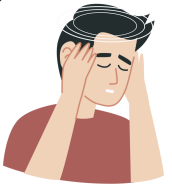
Symptoms:



- Edema
- Exercise intolerance
- Fatigue
- Dyspnea

Causes:

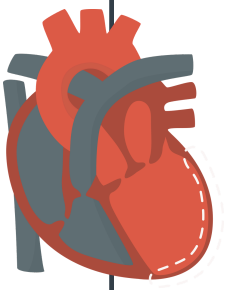
- Endomyocardial fibrosis
- Amyloidosis
- Cancer
- Post-radiation therapy
- Ventricular thrombus
- Sarcoidosis



Nursing Process

Assessment:

Cardiomyopathy may be asymptomatic in early stages. Diagnosis is confirmed through ECG, echocardiogram, stress tests, etc.



Role of Nurses:

- Assess and identify at-risk individuals.
- Assist in diagnostic procedures.
- Provide care through drug therapy and surgical interventions.
- Monitor patient symptoms and manage complications.

Nursing Care Plans

Nursing Diagnosis 1: Activity Intolerance

Related to:

- Imbalance between oxygen supply and demand
- Generalized weakness

As Evidenced By:

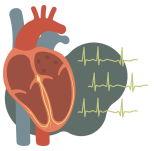
- Abnormal blood pressure and heart rate response to activity
- Anxiety, exertional discomfort, dyspnea, and fatigue

Expected Outcomes:

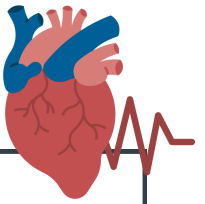
- Increase activity level to perform desired activities
- Climb one flight of stairs without dyspnea

Assessment:

- Activity Response: Monitor
  - tachycardia
  - dyspnea
  - chest pain
  - fatigue
  - diaphoresis
  - weakness, and
  - syncope



- **Desired Activity Level:** Consider the patient's age and activity preferences, especially in children and younger adults.



Interventions:

- **Assist with Self-Care:** Promote independence while reducing cardiac workload.
- **Schedule Rest Periods:** Plan activities with rest in between to minimize cardiac strain.
- **Monitor Activity Intolerance:** Increased intolerance may signal worsening cardiac condition.
- **Encourage Cardiac Rehabilitation:** Follow a graded program to improve cardiac function without overexertion.

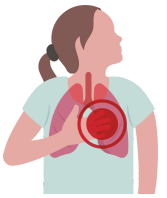
Nursing Diagnosis 2: Decreased Cardiac Output

Related to:

- Altered heart rate and contractility
- Disease process and inflammation

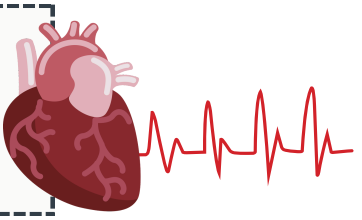
As Evidenced By:

- Fatigue
- Palpitations
- ECG changes
- Tachycardia,
- Bradycardia
- Dyspnea
- Decreased ejection fraction
- Hypotension



Expected Outcomes:

- Adequate cardiac output with normal blood pressure and heart rate
- Reduced feelings of dyspnea and angina



Assessment:

- **Heart Rate and Pulses:** Look for tachycardia, irregular or weak pulses.
- **Blood Pressure:** Monitor for hypotension indicating advanced cardiac failure.
- **Urine Output:** Decreased output may reflect fluid retention.
- **Diagnostic Studies:** Check for heart enlargement, pulmonary congestion, ECG changes.

Interventions:

- **Encourage Rest:** Helps improve cardiac efficiency and decrease workload.
- **Provide Supplemental Oxygen:** Enhances oxygen availability for myocardial function.
- **Administer Medications:** Use antidysrhythmics, vasopressors, and diuretics as needed.
- **Prepare for Pacemaker:** Educate on post-procedure care if required.

Nursing Diagnosis 3: Impaired Gas Exchange

Related to:

- Inadequate gas exchange
- Lack of oxygenated blood
- Ineffective heart muscle contraction
- Compromised blood supply
- Disease process

As Evidenced By:

- Dyspnea
- Tachypnea
- Fatigue
- Accessory muscle use
- Nasal flaring
- Headache
- Altered skin color

- Hypoxia
- Anxiety
- Restlessness
- Altered ABGs
- Eejection fraction < 40%

Expected Outcomes:

- **Oxygen saturation > 95%** and normal breathing pattern
- Perform ADLs without dyspnea or excessive fatigue
- **Maintain ejection fraction > 40%**

Assessment:

- **Respiratory Status:** Look for hypoxia, rapid/shallow breathing, and accessory muscle use.
- **Lung Sounds:** Check for diminished breath sounds and crackles.
- **Vital Signs:** Monitor for changes in pulse, breathing rate, and oxygen saturation.
- **Mentation:** Observe for cognitive changes or restlessness.
- **ABGs:** Check for hypercapnia, dizziness, disorientation, and potential dysrhythmias.

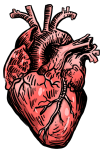
Interventions:

- **Track Vital Signs:** Monitor heart rate, blood pressure, SpO2, and cardiac rhythm.
- **Administer Oxygen:** Enhance oxygen delivery to improve gas exchange.
- **Pursed-Lip Breathing:** Teach technique to slow breathing and release CO2.
- **Remove Lung Fluid:** Use diuretics to address fluid accumulation and improve gas exchange.
- **Teach When to Seek Help:** Advise on seeking emergency care for symptoms like chest pain, severe dyspnea, and syncope.

Nursing Diagnosis 4: Ineffective Tissue Perfusion

Related to:

- Ineffective heart muscle contraction
- Compromised blood supply
- Thickening of the heart muscle
- Stretching of the cardiac muscle
  - Enlarged heart
  - Structural heart damage
  - Difficulty of the heart muscle to contract

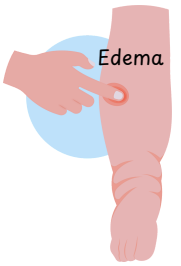


- Increased workload of the heart
- Insufficient blood flow to the heart
- Hypoxemia
- Hypoxia

As Evidenced By:

- Angina
- Dyspnea
- Change in the level of consciousness

- Restlessness
- Fatigue
- Exertional dyspnea/ chest pain during activities
- Cold and clammy skin
- Prolonged capillary refill time
- Change in color of the membranes



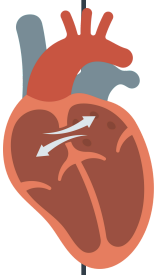
- Edema
- Syncope
- Pallor or cyanosis

Expected outcomes:

- Peripheral pulses and capillary refill time within normal limits
- Intact skin and mucosa with no edema
- Alert, conscious, and coherent level of consciousness

Assessment:

- **ECG:** Detects heart problems such as arrhythmias and heart failure.
- **Echocardiogram:** Provides images of the heart's structure and function. Includes stress echo and TEE.
- **Cardiac Catheterization:** Measures heart chamber pressures and blood flow; detects blockages.
- **BNP Levels:** Elevated levels indicate cardiac damage or heart failure.



Interventions:

- **Improve Blood Flow:** Use cardiac resynchronization therapy (CRT) or left ventricular assist devices (LVAD) if needed.

- **Correct Arrhythmias:** Use pacemakers or implanted cardioverter defibrillators (ICDs); treat underlying causes.
- **Surgical Procedures:** Consider PCI for coronary artery widening or other surgeries if necessary.
- **Manage Chronic Conditions:** Control diabetes, hypertension, and other conditions that affect tissue perfusion.
- **Prevent Blood Clots:** Use anticoagulants to prevent clots, especially in dilated cardiomyopathy.
- **Discuss Surgical Options:** Open heart surgery/heart transplant if other treatments fail.
- **Refer to Cardiac Rehab:** Includes patient education, cardiovascular risk management, and exercise counseling.

Nursing Diagnosis 5: Risk for Unstable Blood Pressure

Related to:

- Ineffective heart muscle contraction
- Compromised blood supply
- Thickening and stretching of the heart muscle
- Structural damage and increased workload of the heart

As Evidenced By:

- A risk diagnosis isn't based on signs or symptoms since the issue hasn't occurred yet. Nursing interventions focus on prevention.

Expected outcomes:

- Maintain blood pressure within an acceptable range
- Participate in activities that help lower blood pressure
- Adhere to prescribed medications for blood pressure control

Assessment:

- **Track Blood Pressure:** Monitor for signs of hypertensive cardiomyopathy and structural heart changes.
- **Assess Ejection Fraction (EF):** Below 55% indicates abnormal heart function; below 40% suggests heart failure.
- **Check for Arrhythmias:** High blood pressure can alter heart rhythm due to structural changes.

Interventions:

- **Control Blood Pressure:** ACE Inhibitors: Relax veins and arteries to manage high blood pressure.
- **Beta-Blockers:** Control blood pressure and irregular heartbeats.
- **Entresto:** Combines valsartan and sacubitril to improve blood flow and lower blood pressure.
- **Maintain Sinus Rhythm:** Amiodarone: Regulates heart rhythm and rate.
- **Digoxin:** Strengthens heart contractions and lowers heart rate; adjust dose with amiodarone.
- **QT Interval Medications:** Adjust as needed to regulate heart rhythms.
- **Teach Recommended Diet:**
  - Emphasize fresh produce, whole grains, lean proteins, nuts, seeds, and low-fat dairy.
  - Avoid red meat, sodium, processed foods, added sugars, alcohol, and fried foods.
- **Assist with Meal Planning:**
  - Educate on the DASH (Dietary Approaches to Stop Hypertension) diet.
  - Help the patient create a meal plan avoiding high-sodium and high-fat foods.