



SUBJECT- MEDICAL SURGICAL NURSING

TOPIC- CONGESTIVE HEART FAILURE

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## INTRODUCTION

- ▶ Heart failure (HF) is a common cardiovascular condition with increasing incidence and prevalence.
- ▶ Unlike western countries where heart failure is predominantly a disease of elderly, in India it affects younger age group.

## KEY WORDS

1. **Heart Failure**-It refers to a condition when heart fails to pump blood through out the body.
2. **Hemochromatosis**- It refers to buildup of iron.
3. **Amyloidosis** - It refers to buildup of protein.

## DEFINITION

- ▶ Heart failure is a chronic condition in which the heart cannot pump enough blood and oxygen to support other organs in your body. ( **CDC- Centre of disease control & prevention**)
- ▶ Congestive heart failure (CHF) is a chronic progressive condition that affects the pumping power of heart muscles. While often referred to simply as “heart failure,”

## TYPES OF HEART FAILURE

- ❖ **Left-sided heart failure** -Fluid may back up in your lungs, causing shortness of breath.
- ❖ **Right-sided heart failure**- Fluid may back up into your abdomen, legs and feet, causing swelling.
- ❖ **Systolic heart failure**- The left ventricle can't contract vigorously, indicating a pumping problem.
- ❖ **Diastolic heart failure**- The left ventricle can't relax or fill fully, indicating a filling problem.  
(also called heart failure with preserved ejection fraction)

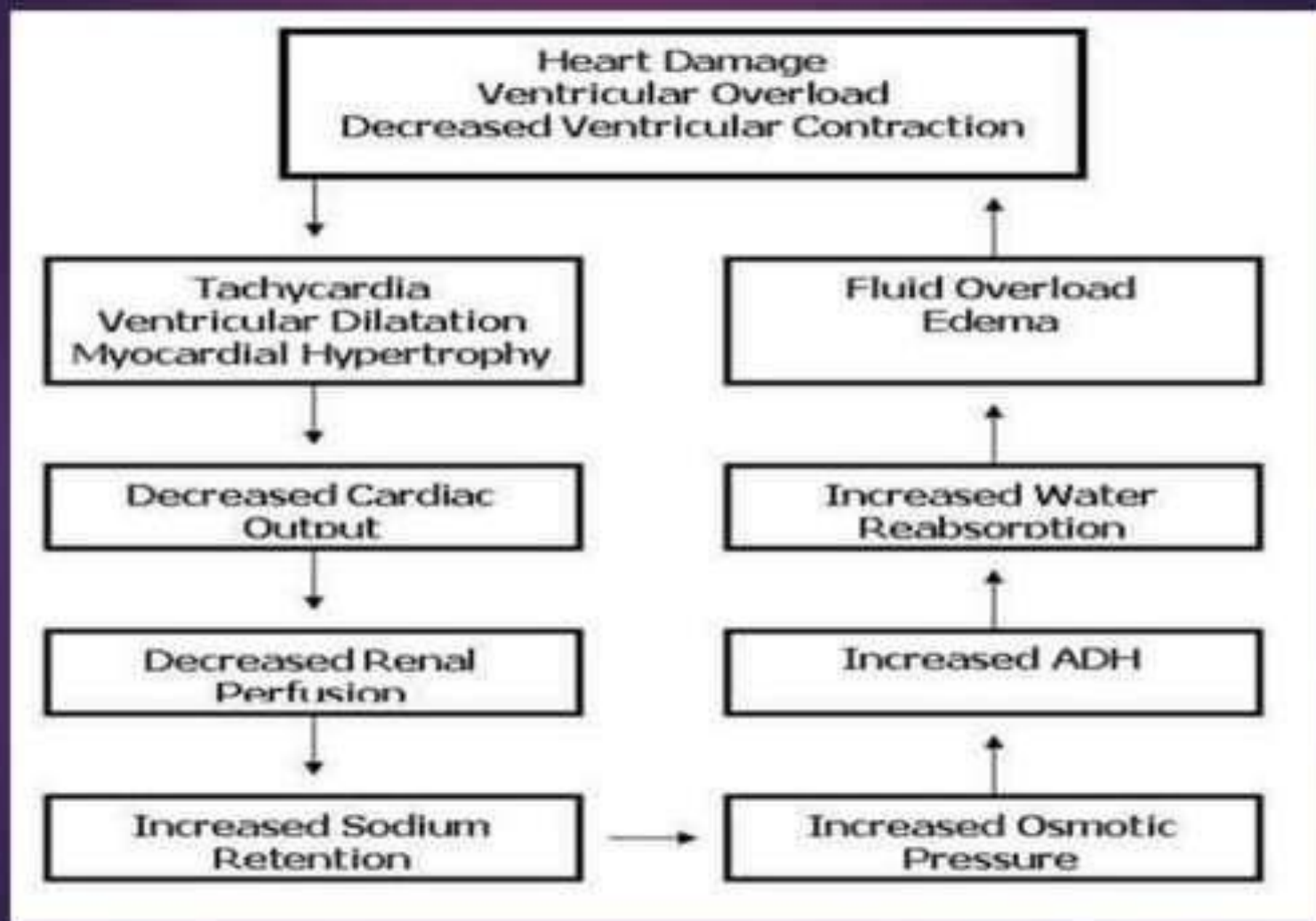
# RISK FACTORS



## CAUSES

- ❖ Coronary artery disease and heart attack
- ❖ High blood pressure (hypertension).
- ❖ Faulty heart valves.
- ❖ Damage to the heart muscle (cardiomyopathy).
- ❖ Myocarditis.
- ❖ Heart defects you're born with (congenital heart defects).
- ❖ Abnormal heart rhythms (heart arrhythmias).
- ❖ Other diseases- Chronic diseases such as diabetes, HIV, hyperthyroidism, hypothyroidism, or a buildup of iron (hemochromatosis) or protein (amyloidosis)


# PATHOPHYSIOLOGY






## CLINICAL MANIFESTATIONS

- ❖ Shortness of breath (dyspnea) when you exert yourself or when you lie down
- ❖ Fatigue and weakness
- ❖ Swelling (edema) in your legs, ankles and feet
- ❖ Rapid or irregular heartbeat
- ❖ Reduced ability to exercise
- ❖ Persistent cough or wheezing with white or pink blood-tinged phlegm
- ❖ Increased need to urinate at night

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- ❖ Swelling of your abdomen (ascites)
  - ❖ Sudden weight gain from fluid retention
  - ❖ Lack of appetite and nausea
  - ❖ Difficulty concentrating or decreased alertness
  - ❖ Sudden, severe shortness of breath and coughing up pink, foamy mucus
  - ❖ Chest pain if your heart failure is caused by a heart attack.

## DIAGNOSTIC EVALUATION

- ❖ **History collection**
- ❖ **Physical Examination**
- ❖ **Blood tests-** Like LFT, KFT & TSH
- ❖ A blood test to check for a chemical called N-terminal pro-B-type natriuretic peptide (NT-proBNP) may help in diagnosing heart failure
- ❖ **Chest X-ray-** heart may appear enlarged and fluid buildup may be visible in your lungs.
- ❖ **Electrocardiogram (ECG)**

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- ❖ **Echocardiogram**
  - ❖ **Stress test-** Stress tests measure how heart and blood vessels respond to exertion.
  - ❖ **Cardiac computerized tomography (CT) scan or magnetic resonance imaging (MRI).**-
  - ❖ **Coronary angiogram**
  - ❖ **Myocardial biopsy**

# MANAGEMENT

## Medical management

### Pharmacological Management

- ❖ **Angiotensin-converting enzyme (ACE) inhibitors-** enalapril (Vasotec), lisinopril (Zestril) and captopril (Capoten).
- ❖ **Angiotensin II receptor blockers.** losartan (Cozaar) and valsartan (Diovan)
- ❖ **Beta blockers.**-carvedilol , metoprolol (Lopressor) and bisoprolol
- ❖ **Diuretics-** furosemide (Lasix)
- ❖ **Aldosterone antagonists-** spironolactone (Aldactone)

- ❖ **Inotropes-** improve heart pumping function and maintain blood pressure.
- ❖ Digoxin (Lanoxin).

### **Non- Pharmacological Management**

- ❖ Maintain input & output of the patient
- ❖ Propped up position of the patients
- ❖ Oxygen support should be provided to the patient.

## Surgical Management

- ❖ **Coronary bypass surgery**
- ❖ **Heart valve repair or replacement.**
- ❖ **Implantable cardioverter-defibrillators**
- ❖ **Cardiac resynchronization therapy (CRT), or biventricular pacing**
- ❖ **Ventricular assist devices (vads)**
- ❖ **Heart transplant**

# NURSING MANAGEMENT

- ❖ Decreased cardiac output related to changes in myocardial contractility
- ❖ Ineffective breathing pattern related to insufficient supply of oxygenated blood.
- ❖ Excess fluid volume related to decreased glomerular filtration rate (GFR).
- ❖ Activity intolerance related to decrease CO.
- ❖ Anxiety related to breathlessness from inadequate oxygenation.
- ❖ Powerlessness related to chronic illness and hospitalizations.
- ❖ Ineffective therapeutic regimen management related to lack of knowledge.

(DETAIL EXPLANATION OF NURSING MANAGEMENT)



## COMPLICATIONS

- ▶ **Kidney damage or failure.**
- ▶ **Heart valve problems.**
- ▶ **Heart rhythm problems.**
- ▶ **Liver damage.**

## HEALTH EDUCATION

- ❖ **Smoking Cessation**
- ❖ **Discuss weight monitoring.**
- ❖ **Check legs, ankles and feet for swelling daily.**
- ❖ **Eat a healthy diet.**
- ❖ **Restrict salt in your diet & limit water**
- ❖ **Maintain a healthy weight.**
- ❖ **Limit fats and cholesterol.**
- ❖ **Limit alcohol and fluids.**
- ❖ **Active lifestyle**
- ❖ **Reduce stress & get proper sleep .**

## RELATED RESEARCH

- ▶ Sullivan MJ et. Al. (2009) Conducted a study on Support, Education, and Research in Chronic Heart Failure Study (SEARCH): a mindfulness-based psychoeducational intervention improves depression and clinical symptoms in patients with chronic heart failure. A prospective cohort study of 208 adults with left ventricular ejection fraction  $\leq$  40% and CHF was geographically assigned to treatment or control groups with follow-up at 3, 6, and 12 months. Treatment groups met weekly for 8 consecutive weeks for training in mindfulness meditation, coping skills, and support group discussion. Subjects had a mean age of 61 years, left ventricular ejection fraction 26%, and median New York Heart Association class II. The majority were treated with angiotensin-converting enzyme inhibitors (80%) and beta-blockers (86%). There were no treatment effects on death/rehospitalization at 1 year. An 8-week mindfulness-based psychoeducational intervention reduced anxiety and depression; this effect was attenuated at 1 year. Importantly, the intervention led to significantly better symptoms of CHF at 12 months compared to control subjects. Our results suggest that interventions of this type might have a role in optimal therapy for CHF.

## PRESENTER'S VIEW

- ▶ Heart failure requires to pay close attention to change in symptoms. Reducing chances of hospital visits by understanding symptoms and knowing when they signal trouble.



**THANK YOU**