HOSPITAL CARE AND THE CORONARY CARE UNIT (CCU)

- Dr. Roshan Raut,
Registrar, Cardiology

Most patients suspected of having an acute heart attack are admitted to a hospital's coronary care unit (CCU). The CCU is intended to be a quiet and calm area in which patients can be further evaluated and closely monitored. Specially trained nurses who work with doctors and other members of the medical team provide individualized care. Visiting hours are usually restricted.

The length of stay in the CCU varies, depending on:

- Whether or not the diagnosis of a heart attack is confirmed
- The severity of the heart attack
- The presence and severity of associated complications

A patient with a heart attack without complications spends about two to three days in a CCU before being transferred to a step-down unit once they become stable. The patient usually goes home five to seven days after hospital admission.

What Are The Goals Of Care In The CCU?

Care in the CCU focuses on:

- Relief of chest pain and anxiety
- Further assessment (diagnostic tests) to confirm a diagnosis
- Limiting the size of the heart attack and the area of heart muscle that dies
- Reducing the work of the heart
- Identifying, preventing, and treating complications from the heart attack

In the CCU:

- Care for the patient which was begun in the emergency setting is continued
- Additional diagnostic tests are ordered
- Doctors determine if a patient needs an angioplasty
- The patient's level of activity and diet is restricted

What Tests And Treatments Occur In The CCU?

ECGs: In addition to the continuous ECG monitoring, 12-lead electrocardiograms (ECG) are obtained to help confirm the diagnosis of a heart attack. Repeat ECGs also help to identify evidence of ongoing ischemia, which is insufficient blood flow to heart muscle or other complications.

Blood tests: Further blood samples are also obtained every six to eight hours for 24 hours to measure cardiac enzyme levels. Increased levels of certain cardiac enzymes suggest the presence of damage to heart muscle and are an important means of confirming a diagnosis of a heart attack. Apart from this, lipid profiles, blood sugar and renal function tests are also done.

Additional diagnostic tests may include:

- Echocardiography
- Cardiac catheterization/coronary angiography

Treatments

- Use of medications such as nitrates, beta blockers, and angiotensin converting-enzyme (ACE) inhibitors to reduce the work load of the heart. This is one way of limiting the size of the infarction (region of dead heart muscle cells).
- Use of thrombolytic clot busters drugs to clear a coronary artery that has been blocked by a blood clot
- Use of antiarrhythmic drugs to treat arrhythmias, which are abnormal heart rhythms.
- Use of a pacemaker, a machine that regulates heart rhythm.
- Use of medications for an abnormally slow heart rhythm (bradycardia) or low blood pressure (hypotension) due to a block in the transmission of the heart's electrical impulses.
- Use of anticoagulants, medications that made the blood less sticky and less likely to clot. These can be used in combination with clot buster drugs or to prevent blood clots from forming in the heart chambers or leg veins after a heart attack.
- Use of medications to treat heart failure if signs of heart failure are present. These include shortness of breath due to fluid in lungs and/or leg swelling.

Depending on the results of these diagnostic and therapeutic procedures, some patients are identified as needing treatments other than medications, including:

- Coronary angioplasty
- Coronary artery bypass surgery

Diet and Activity Levels

Additional precautions taken during the stay in the CCU and step-down unit, include

- Restricting the diet

  For the first 24 hours, the patient is placed on a clear liquid diet to reduce the possibility of aspiration due to nausea and vomiting. A healthy food plan, including complex carbohydrates and fiber-rich foods, is later introduced. All

individuals who have suffered a heart attack need to permanently adopt a healthy diet.

- Limiting activity levels

  All patients are initially placed on bed rest. Patients who are stable, free of pain, and free of complications are sometimes to get out of bed to use the commode. Patients who remain free of complication often begin limited physical activities within 24 hours.

Progression of Activity

Days 1-2

- Sitting up with feet dangling over the side of the bed
- Lifting and lowering of the arms, called range-of-motions exercises, to prevent muscle and joint stiffness and to prevent blood clots from forming in the legs

Days 3-4

- Bathing and dressing while sitting on the bed or in a chair
- Taking short walks around the hospital room
- Taking supervised walks outside the hospital room
- Showering without shampooing hair (no raising of arms above head)

Days 5-7

- Walking about 600 feet three times a day
- Shampooing hair (activities with arms over the head)
- Climbing stairs with supervision
- Undergoing an exercise tolerance test

After several days in the hospital, a patient with an uncomplicated heart attack can go home. Physical activity is then gradually increased over the next three to six weeks. Doctors may recommend the patient attend cardiac rehabilitation.