

Common Causes of Patient Admissions to Critical Care

Acute Myocardial Infarction (AMI): also known as a heart attack. An AMI can occur when the blood flow through one or more of the coronary arteries to the heart is reduced. This reduces the vital organs' continuous oxygen supply and results in an area of the heart being permanently damaged.

Acute Kidney Injury (AKI): is the sudden shut down of both kidneys. The kidneys are no longer able to make urine, rid the body of wastes, or keep a healthy balance of salts such as sodium and potassium.

Adult Respiratory Distress Syndrome (ARDS): a form of acute respiratory failure that occurs after a precipitating event such as trauma, aspiration, or inhalation of a toxic substance. It is particularly associated with septic shock.

Asthma: an acute severe asthma attack is an emergency situation requiring prompt assessment and management.

Cardiac Arrest: occurs when the heart suddenly stops pumping. This may be the result of a number of conditions, but is most commonly associated with a myocardial infarction.

Chronic Obstructive Pulmonary Disease (COPD): is a chronic debilitating disease. Patients include those with emphysema and chronic bronchitis, both of which can result from long term smoking. In this disease, the lungs lose their capacity to absorb adequate oxygen and/or excrete adequate amounts of carbon dioxide from the body.

Diabetic Ketoacidosis (DKA): is a medical emergency. It is a serious condition caused by either not enough, or a lack of insulin. Diabetic Ketoacidosis more commonly affects type 1 diabetics and may be the first sign that a person has developed diabetes.

Hyperosmolar, Hyperglycaemic State in Diabetes (HHS): this diabetic emergency is similar to DKA, however there are some notable differences.

Hypoglycaemic coma: occurs when the blood sugar level is extremely low and there is not enough sugar or glucose for normal brain metabolism.

Drug Overdose: is defined as taking an excessive amount of a drug or drugs which may lead to toxic effects on the body.

Guillain-Barre Syndrome (GBS): this is a rare illness that affects the peripheral nervous system. Symptoms include numbness and weakness in the limbs. It usually develops 10-20 days after a respiratory or gastrointestinal infection that provokes an allergic response in the peripheral nerves.

Heart Failure: occurs when the heart fails in its ability to work as a functional pump to adequately pump blood around the body.

Liver Failure: this can be due to a number of reasons. Hepatitis A, B or C, alcoholism, autoimmune diseases, metabolic disorders, toxins, drugs, fatty liver disease and biliary obstructions. If the disease is longstanding, liver tissue can sometimes be gradually replaced by extensive scar tissue, leaving small areas of liver cells (nodules) which regenerate and attempt to carry out the normal liver functions. This is called cirrhosis of the liver.

Oesophageal Varices: resemble varicose veins, but appear inside the oesophagus and occasionally inside the stomach. A 'varix' is part of a vein that has become enlarged and has thin walls. These may rupture and bleed, resulting in hematemesis.

Pancreatitis: acute pancreatitis comes in mild and severe forms. In severe disease, the effects of the inflammation spreads to other organs and the patient will require intensive medical therapy. The main causes of pancreatitis are gallstones and excess alcohol consumption.

Pleural Effusion: occurs when there is a build-up of fluid in the pleural space. This can occur for a number of reasons including a Hydrothorax – a collection of serous or protein fluid (e.g. in pancreatitis or heart failure).

Pneumonia: is a serious respiratory disorder and occurs when an organism, most commonly a bacteria, causes an overwhelming infection in the lungs leading to inflammation and sputum production.

Shock

Hypovolemic Shock: caused by loss of large amounts of blood or body fluids. It occurs in serious accidents, with major surgery, in burns and with medical conditions where there is severe vomiting and diarrhoea. The patient's heart will pump faster to try to compensate for the decreased blood volume. This is seen as a raised pulse.

Cardiogenic Shock: this is due to heart muscle damage, and can occur as a result of an MI (Myocardial Infarction) or when the heart muscle has a severe infection, for example endocarditis. The damaged heart muscle often results in abnormal heart rates ie tachy or bradycardia. Inotropic drug therapy may be needed to support the heart to pump with more force.

Septic Shock: caused by severe infection. Septic shock is triggered by the body's reaction to the toxins (poison) released by the bacteria into the blood. In severe septic shock, blood vessels may constrict or dilate. Drugs (vasoconstrictors) can be used in critical care to narrow the blood vessels and improve blood pressure. Vasodilators are used if needed to widen the blood vessels, lowering the blood pressure.

Anaphylactic Shock: caused by an allergic reaction. In a severe allergic reaction, the small blood vessels (capillaries) leak fluid and the blood vessels dilate. Usual treatment for this type of shock includes adrenaline.

Neurogenic Shock: caused by damage to the nervous system. The autonomic nervous system keeps the muscles of blood vessels slightly contracted. When a part of this system is damaged, the blood vessels lose the ability to constrict and instead they dilate, causing shock.

All of the above types of shock require admission to critical care.

Cerebrovascular Accident (CVA): is caused by a disruption to the circulation to the brain. When the circulation to a part of the brain stops, the brain tissue is permanently damaged, and the brain cells die. If the blood supply has been blocked by a blood clot in a blood vessel it is called an Ischaemic stroke. When there

has been bleeding from an artery or vein, it is called a Haemorrhagic stroke.

Surgical Procedures: after significant elective or emergency surgical procedures which require close monitoring such as gastrointestinal or colorectal surgery for peritonitis, inflammatory bowel disease.