Acute Cardiogenic Pulmonary Edema

Name:

Institution:

Tutor:

Course:

Date:

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According to the history and presentation of Mr. P, he probably has pulmonary edema secondary to an acute exercabation of his congestive cardiac failure. He is therefore most likely suffering from acute cardiogenic pulmonary edema in tandem with his preexisting cardiac failure. The approach to his treatment involves the management of his treatment and the return to his state to the initial stable cardiac failure status. This can be divided into two main mainstays of treatment. This includes the pharmacologic treatments, Supportive treatment and lifestyle modifications (Longo L., Harrison T. R., D. L. Kasper, 2011).

The pharmacologic modality mainly involves the use of medications to counter the effects of pulmonary edema. Pulmonary edema is the edema of lungs usually resulting from mitral stenosis or left ventricular failure. In this patient’s case, this could have been triggered by the congestive cardiac failure. The factors pointing to this diagnosis are the presence of crackles throughout the lung fields and labored breathing. The presence of an unstable poorly maintained cardiac failure with a grade 4+ pitting edema also point to an increased in the preload leading to fluid accumulation in the most dependent parts of the body which includes the lower limb when standing upright and the lungs and abdomen when lying supine. Because the patient is reported to be noncompliant to medications due to his polypharmacy, the first step of his management is his admission to the ward. This is followed by the conversion of all his current medication to either intramuscular or intravenous routes of administration (Longo L., Harrison T. R., D. L. Kasper, 2011).

The first treatment plan involves, first and foremost securing of his airway and provision of oxygen and ventilation support. Depending on the level of oxygen needed, one decides whether to give oxygen via mask or via nasal prongs and the percentage needed depending on the oxygen saturation levels. In his case the administration of positive pressure ventilation would increase the oxygen levels by reducing the total work requirements. Next is the administration of diuretics. For acute pulmonary edema, loop diuretics offer the best response. Furosemide, bumetamide or torsemide can be administered. However Furosemide is the drug of choice. Less than 0.5mg is given per kg body weight with a maximum level of 1mg.This relieves both the pitting edema and the pulmonary edema (Longo L., Harrison T. R., D. L. Kasper, 2011).

Nitrates such as sublingual nitroglycerin should also be administered at a dose of 0.4mg every five minutes till a relief is achieved. This is followed by the administration of morphine at a dose of 2-4mg as intravenous boluses to relieve the stress and release of catecholamines which ultimately leads to pain relief. Angiotensin converting enzyme inhibitors such as enalapril can also be given to reduce both the afterload and in turn the preload. Dopamine and Dobutamine are sympathomimetic drugs that act to stimulate myocardial contractility thus promoting the peripheral and pulmonary vasodilation. These inotropic and inodilator agents are especially useful in patients if the patient has CHF due to Left Ventricular failure (Colledge R., Walker R., Ralston H., 2010).

The next step of the approach to his management is the supportive care and is the step whereby the family can assist in the management. This involves the nutritionist review since he is unable to adhere strictly to the diet provided. The patient should be told the benefits of eating as per the diet to aid his management process. He should also be advised about the dangers of eating food high cholesterol and the related risks due to this on his condition. This should then be followed by thorough counseling of both the patient and his wife. The social support department should be incorporated in this phase to assist in the waiving of the bills since the family is unable to raise sufficient treatment plans as Mr. P was the sole bread winner (Colledge R., Walker R., Ralston H., 2010).

The teaching plan of this patient includes advising the patient to lie in bed when propped up at approximately 45 degrees. This is in order to decrease the preload to the heart, reducing the force required to pump blood to the heart. He should also avoid lying and resting too much to avoid developing pressure sores on the dependent parts of the body. The patient should also be advised to do exercises as a part of his physiotherapy to reduce the cholesterol levels in the body. All these should be done once the patient is stable and out of his current desaturated state and therefore all these should be done following his discharge. Thorough counseling also needs to be done to the patient to assist in his adherence to the drugs to ensure he takes them at the correct time, in the correct dosage and as prescribed (Matthay MA, Ingbar DH, 1998).

References

Colledge R., Walker R., Ralston H., 2010, *Davidson’s Principles and Practice of Medicine*. Elsevier.

Longo L., Harrison T. R., D. L. Kasper, 2011, *Harrison’s Principles of Internal Medicine* McGraw-Hill Medical.

Matthay MA, Ingbar DH , 1998, *Pulmonary Edema. Lung Biology in Health and Disease*. New York, Marcel Dekker.