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Effects of Enhanced Counter Pulsation Therapy on Patients with Angina

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According to the literature, coronary heart disease (CHD) is responsible for 370,000 deaths annually in the United States (Centers for Disease Control and Prevention [CDC], 2015). A symptom commonly associated with CHD is angina (US Department of Health & Human Services, National Institutes of Health, 2011). An estimated 300,000 to 900,000 patients in the United States have refractory angina patients (CAP), with nearly 100,000 new cases diagnosed yearly (Menchida, Aggarwal, & Soni, 2011).

Angina is a symptom of cardiovascular disease and is often associated with chest pain, which may radiate to the jaw, neck, shoulders, and arm (NH, 2013). Pain associated with angina may vary significantly among patients. A 62-year-old female diagnosed with coronary artery disease was noted to have long-standing debilitating angina pain. This patient’s ability to ambulate and perform activities of daily living are significantly affected. Daily routines such as walking, climbing stairs, or basic housekeeping become impossible without the use of pain medications (Menchida et al., 2013). Symptoms related to angina are often related to poorly understood and standardized pharmacological interventions. Over the course of several years all treatment options were explored. In addition to pharmacological treatments, the patient underwent two coronary artery bypass graft surgery, and received a heart transplant. Despite continued efforts, the patient continued to have long-standing debilitating angina pain. Daily routine tasks are significantly affected. The patient may present with nausea, vomiting, shortness of breath, and restlessness. In February 2015, the patient underwent two coronary artery bypass surgery. Despite continued efforts, the patient’s ability to ambulate and perform daily activities were further affected.

In June 2002, the United States Food and Drug Administration (FDA) approved enhanced external counterpulsation (EECP) as an effective treatment for the management of refractory angina (Sharma et al., 2013). EECP is a non-invasive treatment in the frequency reduction and intensity of angina episodes. During EECP three pairs of pneumatic cuffs are applied to the lower extremities at the level of the calf and upper thighs. Cuff inflation and deflation are synchronized with the ECG (Kones, R., 2010). Typically, the patient will receive three fifty hour sessions over the course of 7 weeks. (Kones, R., 2000)

EECP treatment requires three sets of pneumatic cuffs that sequentially contract during diastole, and automatically deflate before onset of systole (Kones, R., 2013). This process increases aortic diastolic pressure, while enhancing coronary blood flow and overall vaso-noradrenal function (Sharma et al., 2013). Simply speaking, EECP increases the volume of blood returning to the heart, which helps supply more oxygen to its starved areas, therefore reducing angina (Menchida, 2013).

All medications are available for the treatment of angina.Beta blockers, calcium channel blockers, and angiotensin-converting enzyme inhibitors are often used in the reduction of angina pain. Angioplasty and life changes such as smoking reduction are additional treatment options for the patient suffering from angina.

In a study by Kones, R. (2010), the patient undergoing EECP therapy was noted to have long-standing debilitating angina pain. Daily routine tasks were significantly affected. The patient may present with nausea, vomiting, shortness of breath, and restlessness. In February 2015, the patient underwent two coronary artery bypass surgery. Despite continued efforts, the patient’s ability to ambulate and perform daily activities were further affected.

Conclusion

In conclusion, the number of patients diagnosed yearly with refractory angina continues to increase. Pain medication in this patient population is a significant issue faced by clinicians. EECP is an effective and non-invasive treatment option for the patient suffering from refractory angina. EECP is an effective and non-invasive treatment option for the patient suffering from refractory angina. EECP is an effective and non-invasive treatment option for the patient suffering from refractory angina. EECP is an effective and non-invasive treatment option for the patient suffering from refractory angina. EECP is an effective and non-invasive treatment option for the patient suffering from refractory angina. EECP is an effective and non-invasive treatment option for the patient suffering from refractory angina.

References


Addisonal Sources


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