
AN EVALUATION OF THE EFFECTS OF EDTA CHELATION THERAPY FOR THE TREATMENT OF CARDIOVASCULAR DISEASE AND ASSOCIATED CONDITIONS

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Introduction

The word chelation originated from the word “chele” meaning “claw” in Greek and refers to the ability of a compound to bind to reactive ions in the body and remove them from circulation.¹ Therefore, the concept is to detoxify the body by eliminating oxidative species and heavy metals through the administration of a chemical agent. These agents course through the vasculature binding to various toxic compounds that adhere to blood vessels and the surrounding tissue. Eradicating these toxic ions reduces the potential amount of damage and dysfunction that can be inflicted upon the endothelial tissue. Endothelial cell dysfunction is a major contributing factor for the development of atherosclerosis and its progression to cardiovascular disease (CVD).²

Chelation therapy has been used as an alternative method to treat CVD, since 1955.³ A lengthy debate between healthcare professionals related to this type of therapy has been occurring for many years. Initially, chelation therapy was performed in the medical field using ethylenediaminetetraacetic acid (EDTA) to detoxify lead poisoning victims. However, due to additional positive effects observed in these patients, many chelation therapists claim that EDTA is capable of removing calcium from atheromatous plaques in the circulatory system. These healthcare professionals argue that cardiac bypass surgery removes the local

obstruction that exists within the coronary vessels, but neglects other areas of the circulatory system with the potential to develop atheromatous plaques.³ These atheromatous plaques have the ability to induce stenotic changes or detach from the site and become an embolus, which may block the vasculature producing areas of hypoxia and ischemia. As opposed to treating the problem locally, chelation therapists state that they treat the body holistically.³

Some clinicians that are opposed to the use of EDTA chelation therapy for the treatment of atherosclerosis and CVD argue that there is not sufficient clinically based evidence to substantiate these claims. Many of these individuals have declared that this form of therapy is potentially dangerous. Although there is insufficient evidence describing the mechanism for calcium removal from atherosclerotic plaques, EDTA and other chelating agents may be a safe and effective form of treatment for the prevention of CVD.

Another consideration is the potential of toxic metals to impair endothelial cell function contributing to atherosclerosis. Human beings are exposed to a broad spectrum of heavy metal toxins that exist naturally in the environment and are synthesized inorganically on a daily basis. Chronic exposure can cause an accumulation of these heavy metals in the tissues, which can damage the vasculature. We will evaluate several studies using EDTA chelation therapy for the treatment of an extensive array of degenerative diseases. The benefits and potential adverse events associated with chelation therapy will be assessed and the potential damage due to an accumulation of heavy metal toxins in the cardiovascular system will be analyzed.

Background

The central theories surrounding chelation were first developed in 1893 by Alfred Werner, a Swiss Nobel laureate.³ Werner described the potential of metals to bind to organic molecules. However, chelating agents were not utilized until the 1920s. These agents were originally used as an industrial tool in the production of paint, rubber and petroleum.³ In Germany in the 1930s, EDTA was produced to remove calcium ions from hard water.³

A medical use for chelators was not introduced until the World War II era. During this period, researchers were concerned with reducing the effects of chemical warfare. A group of English researchers discovered that British Anti-Lewisite³ could be used as a chelating

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