

in male patients, there was a minimal increase in female patients for FEV<sub>1</sub> values. The minimal increase in FEV<sub>1</sub> in females may indicate that the disease afflicting the female group was more obstructive in nature. Obstructive or inflammatory conditions can induce the production of higher concentrations of NO within the pulmonary tissue to compensate for the hypoxic effects of the pathologic state.<sup>8</sup> EDTA promotes the release of NO by preserving the endothelium further increasing the concentration of NO within the pulmonary vasculature. However, in order to reduce respiratory constriction and inflammation, bronchodilatory agents can be administered, but these agents do not alter NO levels.<sup>8</sup> Considering this information it appears as if EDTA does not affect respiratory obstruction, yet despite this fact FEV<sub>1</sub> levels still increased indicating that the promotion of the overall function of the lung may improve constrictive pathologic states.

Another possible beneficial effect of EDTA is its ability to lower cholesterol. McCann et al used EDTA plus MgSO<sub>4</sub> to treat hypercholesterolemic rabbits. For this study, twenty rabbits were divided into four groups. All rabbits were fed a cholesterol rich diet. The first two groups received 300 mg of intravenous EDTA plus 500 mg of MgSO<sub>4</sub> daily and were then sacrificed after 45 days. Groups 3 and 4 did not receive any injections until after the initial 45 day period. After this period, groups 3 and 4 were fed a normal diet and group 3 received daily infusions of 300 mg of EDTA plus 500 mg of MgSO<sub>4</sub> for 66 days while group 4 received saline injections. Each group was then sacrificed. The aorta was removed just above the bifurcation leading into the iliac arteries and a cross sectional area was extracted for examination. The authors concluded that the EDTA treated rabbits had significantly lower cholesterol levels and a reduction in atheroma formation in phase I compared to the controls, but there was not a significant improvement in cholesterol levels in phase II.<sup>9</sup>

At the beginning of phase I, the total cholesterol and triglyceride levels were 5.52 mmol/l and 1.76 mmol/l respectively for the control group and 4.99 mmol/l and 2.18 mmol/l respectively for the treatment group.<sup>9</sup> At the end of phase I, total cholesterol and triglyceride levels for the control group were 28.74 mmol/l and 2.18 mmol/l respectively and 19.84 mmol/l and 1.38 mmol/l respectively for the treatment group.<sup>9</sup> The aortic cross sections for the control group revealed roughly 16% occlusion while the level of obstruction in the treatment group was about 12%.<sup>9</sup>

At the beginning of the second phase, the cholesterol and triglyceride levels were 28.56 mmol/l and 2.18 mmol/l respectively for the control group and 26.590 mmol/l and 2.21 mmol/l respectively for the treatment group.<sup>9</sup> The levels at the end of phase II were 7.18 mmol/l and 1.29 mmol/l respectively for the control group and 4.98 mmol/l and 1.25 mmol/l respectively for the treatment group.<sup>9</sup> The percent of obstruction for the control group was 82.28% while the stenotic changes within the treatment group were 62.98%.<sup>9</sup>

The significantly lower total cholesterol levels and minimal calcific atheroma formation at the end of phase I suggests that EDTA may be beneficial in the treatment and prevention of arterial damage for individuals on a high cholesterol diet. Another important consideration is the reduction in total triglyceride levels in the treatment group while the levels in the control group increased. A possible mechanism to explain the lower cholesterol and triglyceride levels in the treatment group is the reduction in the severity of endothelial cell damage preventing free cholesterol esters and triglycerides from adhering to the vascular wall and accumulating in the circulation. Additionally, some of the circulating molecular products may have been bound by EDTA and excreted from the body.

In phase II, total cholesterol and triglyceride levels dramatically decreased. Although the treatment group had lower cholesterol and triglyceride levels, the reduction in each group was comparable, which can be attributed to converting the groups to a normal diet. The data from phase II indicates that, in addition to preserving the vascular endothelium, EDTA may assist directly in the removal of exogenous cholesterol from circulation. However, EDTA does not appear to have any effect on the removal of cholesterol or triglycerides generated from an endogenous source or through the conversion of carbohydrates to lipids. Therefore, dietary modification may be a more important factor for the reduction in total cholesterol and triglyceride levels than EDTA chelation therapy. This suggests that EDTA may not be beneficial for the reduction in cholesterol and triglyceride levels in normal healthy diets and lifestyles, but demonstrates a profound effect in high cholesterol diets.

Another consideration is that the degree of occlusion of the arteries for the treatment group was significantly lower in both phases. The smaller percentage of stenotic changes within the arteries shows that EDTA has the ability to bind to and remove some of the

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