

SHORT COMMUNICATION**Adjuncts to EDTA-Chelation Therapy Used by Experienced Clinicians: A Survey****L. Terry Chappell, MD**

EDITOR'S NOTE: This short communication is valuable, and was included in this issue to show how disparate the adjunctive treatments are that are given with EDTA chelation. It is patently obvious that data need to be collected by individual physicians or physicians in groups if we are to make sense of the claims that are made. It seems that a return rate of 17% of the questionnaires is rather poor when the effort was made by Dr Chappell to define these important questions. It must again be stressed that chelation is currently being pioneered and that we have a duty to document and report our results so that our colleagues can decide what is "wheat" and what is "chaff."

Many members of the American College for Advancement in Medicine use EDTA-chelation therapy to treat vascular disease. Recently, there have been several proposals to perform large clinical trials to determine the efficacy of this treatment.¹ Such research is important. However, specialists in chelation therapy often use adjuncts in addition to the basic therapy to improve the results for their patients.

I surveyed physicians certified by the American Board of Chelation Therapy to determine which adjuncts are being used in clinical practice, the indications for their use, and how effective they appear to be.

Methods

In a detailed questionnaire that listed 28 possible adjuncts to chelation therapy, with a separate category for "other," participants were asked to report whether they used the adjunct, the indications, the dose or type, the results noticed, and any problems or precautions. A single mailing of the questionnaire was sent to the 150 diplomates of the American Board of Chelation Therapy. The responses were tabulated and analyzed.

Results

Twenty-five completed questionnaires were returned for a response rate of 17%. This response rate was considered adequate, because the questionnaire was fairly detailed, no incentives were offered, and there was only 1 mailing. The returned questionnaires were filled out thoroughly with numerous comments on the effectiveness of various modalities. The adjuncts listed can be divided into several categories: lifestyle changes, intravenous (IV) treatments, oral nutrients, oral medications, and physical therapy modalities.

Lifestyle Changes

The lifestyle changes listed were special diets, exercise programs, and stress reduction measures. A total of 96% of respondents listed dietary changes, but a wide variety existed in the type of dietary advice given. Most respondents listed general dietary guidance with an emphasis on a low-fat diet. The most common specific diet—listed by 20% of the respondents—was a low-carbohydrate, high-protein diet similar to the Atkins diet. The Zone diet, the Blood Type diet, the Hallelujah diet, and an organic, vegetarian diet were also listed.

Of the participants, 64% put their patients on exercise programs, mostly aerobic exercise, with walking being a favorite activity. Stress reduction measures were listed by 36% of the respondents. Some of the specific therapies listed were proverbs, healing touch, meditation, deep breathing, yoga, Reiki, and psychiatric referral. Massage therapy was included only as a physical therapy activity, but it may have stress reduction effects as well. All lifestyle advice given by the doctors or their staff was thought to be effective when followed, but compliance was sometimes a problem.

Intravenous Treatments

A very high percentage of respondents (80%) used mineral IV treatments at some point during the chelation course for many patients. Some respondents gave a couple of mineral IV treatments before any EDTA administration; others gave one every 5 or 6 treatments. Other participants provided the extra minerals only if the patient complained of fatigue. Magnesium was listed specifically if the patient had asthma.

Sixty percent expressed a special concern for mercury toxicity, especially when high levels were found in

the hair analysis. Amalgam replacement was mentioned several times. Some felt that EDTA treatment might suffice if the levels were not too high, but most added other chelators, often before EDTA chelation was begun. Thirty-two percent of the respondents identified 2,3-dimercaptosuccinic acid as the agent of choice, whereas 20% listed 2,3-dimercaptopropane-1-sulfate and 8% penicillamine; 2,3-dimercaptosuccinic acid and penicillamine are oral chelators.

Other IV adjuncts listed by more than one respondent included desferoxamine (especially with iron overload or with recent stroke), glucagon, phosphatidyl choline, dimethyl sulfoxide (with coexisting arthritis and for brain pathology), and hyaluronic acid (which is postulated to carry EDTA to areas of inflammation in arteries). Three supplements were usually given orally but can be given intravenously as well: taurine (especially for hypertension, congestive heart failure, and eye problems), glutathione (to increase antioxidants and for Parkinson's disease), and arginine (to increase nitric oxide). One physician used colchicine as an IV push 3 times a week for congestive heart failure.

Oral Nutrients

Vitamin E was prescribed routinely by almost all (96%) respondents and vitamin C by 92%. Coenzyme Q10 was used commonly by 84%, carnitine by 68%, and essential fatty acids by 72%. Lysine might be added if the lipoprotein a was elevated. Doses of these substances varied a great deal.

A few doctors mentioned enzyme preparations to reduce inflammation that may be a significant factor in the "vulnerable plaque" or to facilitate the removal of heavy metals. Vitamin B₁₂ was listed as a good treatment for depression, but it was mostly given intramuscularly.

Although it was not listed as a choice on the questionnaire, more respondents (28%) wrote in niacin (primarily inositol hexaniacinate) than the "statin" category of drugs to treat hyperlipidemia. One doctor preferred a Chinese red yeast preparation to lower cholesterol.

Various antiaging measures were listed by several physicians, including the use of melatonin, dehydroepiandrosterone, sex hormones (especially testosterone), thyroid, and growth hormone.

Oral Medications

The most common medications listed were used to treat hypertension, in particular angiotensin-converting enzyme inhibitors (60%) and β -blockers (56%), and respondents were careful to add additional coenzyme Q10 when using the latter. Rigid control of the blood pressure was thought to be especially important by 24% of the respondents.

The statin drugs were suggested in 20% of the responses, particularly if the low-density lipoprotein for a heart patient was greater than 100. Forty percent of the respondents recommended routine aspirin, mostly at 81 mg/day. Plavix was not considered first line by anyone. To help control stress and depression, trazadone and selective serotonin reuptake inhibitors were suggested by one physician.

Physical Therapy Modalities

From time to time, various physical therapy measures have been suggested to improve the effectiveness of chelation therapy. One physician used pulsating magnetic fields for all of his patients while they were receiving the IV treatment. Magnetic therapy was offered by 20% of respondents, but mostly it was prescribed for pain relief. Another doctor used therapeutic ultrasound routinely. Two respondents used the Chi light to improve circulation, particularly for vascular ulcerations. Forty percent utilized massage therapy as an adjunct, but a quarter of these respondents stated that they do not do so routinely.

Discussion

This survey clearly shows that certified chelation therapy specialists offer many adjunctive therapies to their patients in an effort to improve outcomes. By far the most common evaluation of efficacy was that the adjuncts used produced good to excellent results, but several responders qualified their statements by stating that it is difficult to sort out what is really working when one is providing multiple interventions. One doctor made the comment that, "There are lots of myth and nonsense practiced with no good data."

Although this statement could also apply to conventional medical protocols that suggest multiple medications that have never been studied together as a treatment, there is still a need to produce the data needed to find the most cost-effective protocols for the treatment of vascular diseases with chelation therapy and whatever adjuvants are appropriate. Physicians using chelation therapy should keep systematic records so that they can compare groups using different protocols, and the results need to be published.

Conclusions

Lifestyle changes are widely used and are an important part of the chelation program. The type of diet recommended varies considerably. Most respondents individualize diet recommendations depending on each patient's situation and coexisting risk factors.

Mercury and iron toxicity are thought to be important problems for many patients. Frequently, additional

chelating agents are employed to deal with mercury and/or iron overload.

Many IV adjuncts are used by physicians who administer EDTA chelation. Mineral IV treatments are prescribed by most doctors for fatigue or arrhythmias, and sometimes routinely out of a concern that patients might become mineral deficient as a side effect of EDTA therapy. The addition of such IV adjuncts as glucagon, phosphatidyl choline, colchicine, dimethyl sulfoxide, hyaluronic acid, glutathione, arginine, and taurine are all supported by anecdotal reports of increased efficacy. These adjuncts must be studied with controlled clinical trials. If the large trials investigating chelation therapy with multivitamins proceed and show efficacy, chelation specialists will have the responsibility to provide enhanced improvement by the use of such adjuncts when appropriate.

The therapies for hyperlipidemia, intravascular coagulation, and hypertension are controversial for this group. Although some chelators accept that statin drugs should be used routinely for hyperlipidemia, especially to lower the low-density lipoprotein below 100, as is recommended by conventional medicine in patients with known heart disease, others never use them. The most common treatment given by chelating doctors is sustained-release niacin.

EDTA has antiplatelet activity in itself,² and heparin is often added to the treatment bottle to prevent phlebitis.³ In addition, most chelating physicians routinely use vitamin E and essential fatty acids, at least partially for their platelet inhibition. Low-dose aspirin is also given by 40% of chelators. Apparently, a significant number of responders to this survey feel that the nutrient therapy is sufficient to replace aspirin.

Chelating specialists are more likely to prescribe the standard antihypertensive families of angiotensin-converting enzyme inhibitors and β -blockers than most medications. They also choose to add nutrients such as coenzyme Q10, L-carnitine, essential fatty acids, and taurine

(usually in conjunction with magnesium). Like most conventional physicians, those who administer chelation are probably not achieving the newly proposed blood pressure goal of 130/80 mm Hg for patients with known heart disease or diabetes mellitus, and 120/70 mm Hg for patients with both.⁴ However, they might be doing better than most of their more conventional colleagues due to the addition of these antihypertensive nutrients and also to the reduction of accumulated low levels of lead, which is directly proportional to the blood pressure.⁵

Physical therapy measures are less likely to be used than other adjuncts. However, such modalities as pulsating magnetic fields and other magnets, ultrasound, and the Chi light have their proponents. These present another fertile area for research. Massage therapy is called upon somewhat more frequently and might better be used almost routinely, due to its potential to improve circulation (at least temporarily), reduce pain, and relieve stress.

EDTA chelation is considered by many specialists in longevity medicine to be one of the most powerful therapies to prolong life while maintaining a high quality of life. As with almost all antiaging therapies, the data are meager. The combination of hormonal replacement therapy, based on clinical findings and laboratory testing, with chelation therapy is potentially a comprehensive approach.

References

1. Lamas GA, Ackerman A. Clinical evaluation of chelation therapy: Is there any wheat amidst the chaff? *Am Heart J.* 2000;140:4-5.
2. Kindness G, Frackleton JP. Effect of ethylene diamine tetraacetic acid (EDTA) on platelet aggregation in human blood. *J Adv Med.* 1989;2:519-530.
3. Rozema TC. The protocol for the safe and effective administration of EDTA and other chelating agents for vascular disease, degenerative disease and metal toxicity. *J Adv Med.* 1997;10:5-100.
4. Joint National Committee. The sixth report of the Joint National Committee on detection, evaluation, and treatment of blood pressure (JNC-VI). *Arch Intern Med.* 1997;157:2413-2446.
5. Cranton FM, Frackleton JP. Free oxygen radical pathology and EDTA chelation therapy: mechanisms of action. *J Adv Med.* 1998;11:277-310.