

Chelation Therapy

Introduction

Important scientific discoveries often occur coincidentally. The history behind the development of chelation therapy certainly confirms this fact. In the Thirties, EDTA, the active component in chelation therapy, was discovered by a German, Munz. He had been searching for a substance which could soften hard water, and it appeared EDTA was highly effective in doing so. But EDTA had the capacity to do much more. The substance happened to have a strong affinity for (toxic) heavy metals such as lead, mercury and cadmium, and actually binds with them.

For this reason, EDTA was initially used in treating acute lead intoxication. Lead, an extremely toxic substance to the human body, was bound to EDTA injected into the blood stream and thus simply removed from the body during urination. With EDTA, however, fate became the mother of invention.

Patients suffering from cardiovascular disease, who were being treated with EDTA for acute lead intoxication, noticed improved stress tolerance and less chest pain upon exertion. They were also able to walk longer distances. Surprisingly, chelation therapy appeared to have produced an unexpected healing effect for their cardiovascular problems.

This finding led to further investigation. It was Norman Clarke who, in 1956, published an article in *The American Journal of Medical Science*, claiming the successful treatment of patients with severe angina pectoris (chest pain caused by narrowing of the coronary arteries) through the use of EDTA. In 1960, well-known cardiologists Kitchell and Meltzer reported that chelation therapy caused both objective and subjective improvement in 9 out of 10 patients suffering from angina.

Soon hereafter, numerous publications on the successful treatment of patients with narrowed leg or brain arteries started appearing.

In 1988, Olszewer and Carter published their findings after treating 2870 patients with EDTA chelation therapy. More than 93% of the patients suffering from narrowed coronary arteries, showed good to excellent improvement.

Patients suffering from the narrowing of leg arteries improved in 97% of all cases. And patients suffering from narrowed brain arteries also profited, although less dramatically (60%).

All in all, these results have led to an increased interest in the effectiveness of chelation therapy. Many millions of treatments administered to date are proof of this effectiveness.

How Does Chelation Therapy Work?

EDTA (short for ethylenediaminetetraacetic acid) is the active component in chelation therapy and is a chelator or chelating substance. This term stems from the Greek word "chele", meaning claw, as EDTA actually grabs on to metal particles (such as calcium, lead, mercury, cadmium) like a claw. Once injected into the blood stream, it binds to these particles and this entire complex (EDTA plus metal particles) is excreted from the body during urination. The positive effects of chelation therapy can be seen in the following:

EDTA influences narrowed arteries

It is the process of arteriosclerosis which causes narrowing of the arteries of heart, legs and brain. Here, calcium deposits (plaque) are found in the arterial wall. EDTA binds calcium ions (electrically charged calcium particles) in the blood and excretes them via the kidneys into the urine. Thus, the blood calcium ion concentration will drop and (in response to this) will lead to the release of parathormone (PTH). PTH in its turn will attract calcium ions from the tissues (including the arterial walls) in order to compensate for the lowered blood calcium concentration. Were this PTH reaction not to happen, the blood calcium concentration would drop still further and lead to involuntary contractions of numerous muscles (tetany).

EDTA influences the function of body cells

Upon ageing, the calcium concentration of body cells will gradually increase. This leads to impairment of metabolic processes and energy production within the cell (in other words: impaired cell function). Chelation therapy will decalcify these cells, thereby improving their function.

EDTA removes heavy metals

One of the most important functions of EDTA is the removal of heavy metals from the body. Upon ageing, substances such as lead, mercury and cadmium accumulate in the body ("internal pollution"). Present day lead load in humans, for instance, is about 1000 times higher than 1600 years ago. Heavy metals exert very damaging effects upon the body, amongst other things because they block numerous enzymes (substances which accelerate certain bodily processes).

EDTA influences free radical reactions

EDTA also removes iron and copper from the body. These metals are involved in so-called free radical reactions which take place in the body. Free radicals are atoms or molecules (containing a unpaired electron) which tend to interfere with numerous bodily processes in an extremely aggressive fashion. For instance, free radicals can bind to enzymes, cellular membranes or DNA (the genetic material) and thus interfere with their function. Given the proper conditions, free circulating iron and copper ions can promote the formation of free radicals. Chelation therapy will remove an excess of these ions from the body and thus exert a positive effect on these damaging reactions. This EDTA effect explains the positive influence on arthritic complaints which, in part, are caused by free radicals.

EDTA influences blood coagulation

EDTA has a positive effect on blood platelets (thrombocytes). These play an important role in cardiovascular and other arterial disease. Generally, brain and myocardial infarctions occur because clots (which are largely made up of platelets) close off a vessel.

Moreover, blood coagulation tendency in arteriosclerotic disease appears to be greater than normal, thus facilitating the formation of clots. EDTA, however, reduces platelet stickiness, thereby considerably reducing the chance of clot formation.

EDTA influences red blood cells

Red blood cells (erythrocytes) contain oxygen, the essential component every cell needs. Through chelation, red blood cells become increasingly flexible, making them better capable of reaching smaller blood vessels and thus increasing circulation and oxygen delivery.

Does EDTA Have Side Effects?

1. If EDTA is applied in too high a dosage, over too short a period of time, kidney function can (temporarily) diminish. Proper use of EDTA (based on the protocol as set by the American as well as the International Board of Clinical Metal Toxicology – ABCMT and IBCMT, formerly known as the American and International Board of Chelation Therapy – ABCT and IBCT) reduces this side effect to practically zero. Moreover, in many cases, diminished kidney function prior to commencing chelation therapy will improve under chelation treatment.
2. Some patients experience discomfort of the arm in which the infusion is given. This complaint can be prevented through simple measures.
3. EDTA has a blood sugar (glucose) lowering effect and for this reason a positive influence on diabetes mellitus. A normal, healthy blood glucose level can also be lowered by EDTA (only temporarily, during the actual infusion). This can bring on sleepiness, hunger pangs and shakiness. Complaints like these can be prevented by eating shortly before and during the infusion (bread, fruit, etc.) and by drinking fruit juice.
4. Rarely, blood calcium levels drop during treatment. Complaints that may arise are: tingling around the mouth, in fingers and toes, as well as, cramping of hands and feet. A calcium injection (calcium gluconate) makes these complaints disappear rapidly.
5. Some patients experience fatigue during the first (ten or so) number of infusions. This is a normal phenomenon, which soon disappears on its own. The vast majority of patients will soon start to feel more fit and energetic because of chelation therapy.

When Is Chelation Therapy Needed?

Narrowing of the coronary arteries

Angina pectoris: chest pain as a consequence of lack of oxygen of the heart muscle. This pain generally occurs upon exertion, in cold weather, emotional states or upon eating copious meals, but sometimes also when in a resting state and at night.

Heart attack (myocardial infarction): here, part of the heart muscle has actually died off, generally as a consequence of an acute blockage of a coronary artery. Chelation therapy helps prevent new heart attacks, as well as angina pectoris after a heart attack. Moreover, chelation improves the pump function of the residual, undamaged heart muscle.

Prevention of bypass surgery or balloon angioplasty: large American and European studies show that only a small percentage of patients undergoing such procedures will experience long term effects, as compared to patients treated with medication only.

Narrowing of the leg arteries

The initial stage of this condition is called intermittent claudication, where patients suffer from different degrees of pain. Gangrene (actual tissue die-off as a consequence of blockage or severe narrowing of a blood vessel) can be the next stage (the so-called "black toe" is a good example of this).

Narrowing of cerebral blood vessels

These can manifest themselves in the following ways:

TIA (Transient Ischemic Attack): temporary lack of oxygen of the brain, which completely reverses itself within 24 hours (such as transient speech difficulties, transient paralysis, transient blindness in one eye, etc.).

Cerebral infarction: die-off of brain tissue as a consequence of blockage of a blood vessel by clot build-up onto an already narrowed segment (thrombosis), or blockage caused by a loosely circulating clot which became lodged (embolism). Also known as a stroke.

Memory and concentration difficulties

Dizziness

Dementia

Impaired vision and hearing

Fatigue, decreased vitality

The majority of patients experience an increase in energy and vitality as a consequence of chelation therapy.

Diabetes Mellitus

Chelation therapy improves sugar metabolism. Diabetics undergoing chelation therapy often need less insulin or oral blood glucose lowering medication during the course of treatment. Moreover, chelation therapy helps prevent complications of diabetes, such as eye, nerve and kidney damage, as well as accelerated arteriosclerosis.

High blood pressure (hypertension)

Chelation therapy will generally lower raised blood pressure. Blood pressure lowering medication can frequently be diminished or even discontinued.

Rheumatic complaints

Here, chelation therapy is also frequently effective. However, additional measures are almost always necessary.

Prevention, "life extension" - striving for optimum health

Because of the favorable effects of chelation therapy on free radicals, heavy metals and calcium deposits, degenerative processes (arthritis, general "wear-and-tear") of the body will be slowed down. Not only will the body's blood vessels be kept in good condition, but the entire body benefits from regular EDTA infusions.

Research in laboratory animals shows a clear increase in life expectancy through EDTA. In humans, increase in life expectancy is estimated at 8-17 years in men and 6-16 years in women (an average of 12 years). Life extension in and by itself would not make sense if the quality of life were not equally effected in a positive fashion. Chelation therapy clearly has this effect as well.

And How About The Scientific Proof?

The argument many conventional doctors use in their criticism of chelation therapy is that the effects have never been properly proven. Here is summary of some trials on the effects of chelation therapy. This is only the tip of the iceberg when it comes to the amount of available trials:

- One trial with 2870 patients showed considerable to excellent improvement after chelation therapy (both objectively and subjectively) in 93% of patients with heart disease, 98% of patients with narrowing of the leg arteries and 54% of patients suffering from cerebral vascular problems.
- In another trial, 17 out of 18 patients showed considerable improvement of cardiac pump function after 20 chelation drips.
- 15 Patients with impaired brain circulation, all reported a lessening of complaints. In 14 of these a brain scan clearly demonstrated improved circulation.
- In 57 patients with narrowed cerebral vessels, narrowing dropped back from an average of 28% to 10%.
- In yet another trial, with 30 patients suffering from narrowing of the cerebral vessels, a sonogram of the neck arteries (carotids) was performed after 10 months. It showed a decrease in vessel narrowing from 49% to 28%. The group with the most severe stages of narrowing improved even more dramatically, from 77% to 42%.
- In patients suffering diminished kidney function, average kidney function improved by 50%
- Research involving another 50 patients showed clear improvement in pulmonary function (an average of 12%; the group of patients suffering from impaired lung function before commencing chelation therapy even reported more than 20% improvement).
- A large review article involving 22.765 patients, showed improvement of different vascular complaints in 87% of all cases after chelation therapy.

A very exciting and recent development has been the start of the TACT (Trial to Assess Chelation Therapy) study. This trial, which started early 2003, is sponsored by the National Center for Complementary and Alternative Medicine (NCCAM) and the National Heart, Lung, and Blood Institute (NHLBI), components of the National Institutes of Health (NIH) in the United States. The trial will run for 5 years and will involve 2300 patients doing chelation therapy at more than 100 research sites, using the official ABCMT/IBCMT protocol. Given the fact that a government institution is sponsoring the trial, the value of the outcome (which chelation doctors anticipate to be favorable) will greatly contribute to the acceptance of chelation therapy as a valid, safe and effective method.

Chelation Therapy In Practice

Are you interested in chelation therapy? The first step would be for you to set up an intake appointment. Not only will your current complaints be analyzed, but also other matters such as your medical history, life-style, use of medication etc. will be addressed. Afterwards, a physical examination is performed to assess your condition more accurately.

Additional Examinations

In addition to the basic physical examination, the doctor will often need extra information. Laboratory blood tests will be needed to assess possible liver or kidney function disturbances, raised blood lipids (cholesterol), infections, anemia, etc. Sometimes an electrocardiogram (EKG) or a bicycle stress test will be needed to assess the condition of the heart more closely.

If you are being, or have been, treated by other medical doctors or specialists for your condition, you may be asked for approval to have your specialist supply additional medical data. This is to avoid duplication of tests and to better inform the doctor about your condition.

The Therapy

As mentioned earlier, chelation therapy is applied via a drip. A special needle is inserted into one of the veins in the arm. Once in the vein, the actual needle is removed, leaving a small, flexible plastic catheter in place. This catheter allows for a certain amount of mobility; you may bend your arm, walk around, go to the toilet, etc.

After hooking up the drip bottle to the catheter, the appropriate infusion rate is set. For optimal effect, the average length of a chelation session is 2 1/2 to 3 hours.

The treatment regime for a diagnosed disease or condition consists of a series of 25 drips, preferably twice a week. After this series, the frequency is gradually reduced to one monthly maintenance session. This is done in order to prevent the possible further progress of the treated condition.

Individual adjustments of treatment frequency and intervals is possible, but may not always be advisable. The maximum effect of chelation is generally not reached until 2 to 3 months after the 25th drip.

This does not imply that improvement of complaints will not become visible much faster. Some patients report clear progress after 5 drips, others will not experience anything until the 15th bottle.

The use of chelation therapy as a form of prevention does not require such a large number of sessions. A series of 10 drips, administered twice per week, tends to be the norm. The necessity or frequency of maintenance sessions can be decided upon on an individual basis.

Other Measures

If you are a smoker and want to start chelation therapy, you should quit. Smoking impairs the effectiveness of chelation therapy and may show disappointing results. Nicotine patches, acupuncture or hypnotherapy are only some of the ways to help you kick the habit.

A proper diet is also important. In short, this means limiting the intake of saturated fats (mainly red animal meats such as beef, pork and lamb), as well as, the use of refined products and sugar. Fresh foods as supposed to processed ones are recommended. Furthermore, your diet will need to be supported with nutritional supplements: mega-dose vitamins, minerals, trace elements, (co)enzymes, etc. These may well have a positive influence on the disease process and are vital in preventing shortages of certain vitamins and minerals which chelation therapy tends to deplete.

Important notes

You will need to realize that, unfortunately, conventional medicine still does not recognize chelation therapy to be a valid, safe and effective treatment method. Many doctors are very outspoken in their opinion, labeling it as quackery and nonsense. It is up to you, the patient, to make the difficult choice whether to proceed with chelation or not.

In case you do decide to proceed, make sure the physician treating you is a certified chelation doctor. Chelation therapy happens to be an “unprotected” treatment method, making it possible for any doctor to do chelation without proper training.

You will know that you’re in good hands by making sure your doctor has been certified by either the ABCMT or the IBCMT. These organizations will only certify doctors who have followed their training program, abide by their treatment protocol and regularly recertify after refresher courses and written exams. The physician at the Amsterdam Kliniek has been certified by both organizations.

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