InterClinical Laboratories Practitioner
Newsletter

Volume 17 | Number 4 | November/December 2013

InterClinical Laboratories
Pty Limited ACN 076 386 475

PO Box 6474
Alexandria NSW 2015
Australia

Unit 6, 10 Bradford Street
Alexandria NSW 2015

Phone
(02) 9693 2888

Fax
(02) 9693 1888

Email
lab@interclinical.com.au

Web
www.interclinical.com.au

Be our friend!

You can also find us on Facebook. Find current research, seminar information and specials.

Season's Greetings

It has been an incredibly busy and productive year at InterClinical Laboratories. The *Running on Empty- "Burn out, stress and fatigue"* seminar series were a great success with some practitioners attending multiple seminars in different states! We'd like to take this opportunity to thank all the people who were actively involved in our seminar series; your efforts helped to make the series a complete success. 2014 brings with it new projects including an exciting new seminar series and key note speaker- details will be published in the New Year.

We are well into Spring and are heading into Summer, the busiest time of the year. The end of year holidays brings a time of personal reflection and long summer days to be with those we love. As a time of celebration, one's health can incur a series of hurdles, like end of year work functions laden with rich foods, alcohol and sweets. Even for a practitioner; this may be time of overindulgence. That said, we'd like you to reflect on the new statistics detailed in the article herein by Dr David Watts; *Diabetes - A Failed Approach.*

The paper reports that in the US alone there is approximately a one percent increase in diagnosed cases of Type 2 diabetes each year. One percent may not sound like a lot but in the US that equates to over one million eight hundred thousand children and adults every year. What's particularly alarming is the increased incidence of children being diagnosed with Type 2 diabetes. Dr Watts discusses the various factors which impact the progression of this disease, and, argues that medicine may not be doing enough in the way of treatment and prevention.

Also, in this newsletter is the very last installation of our educational monographs on the Additional Elements, this time featuring Platinum. If you wish to see any previous Additional Element articles; Geranium, Barium, Bismuth, Rubidium, Lithium, Nickel, Thallium, Vanadium, Strontium, Tin, Titanium, Tungsten and Zirconium, please visit our website and click on the 'Newsletters/ Publications' tab, or contact us for past editions.

We'd like to thank you for your ongoing support throughout this year. We wish you and your families all the very best in health and business, and hope that 2014 brings with it a renewed invigorated approach to your practice.

Yours in health,
The Team at InterClinical Laboratories.

Practitioner Clinical Updates

DIABETES – A FAILED APPROACH

By David L. Watts, Ph.D., Director of Research, Trace Elements Inc.

The most recent report by the Centre for Disease Control states that the rate of diabetes has almost doubled. To be more precise, the rates have been found to be ninety percent higher since 1997. Almost twenty -six million people, that is children and adults in the U.S. now have diabetes. Approximately one million eight hundred thousand new cases are diagnosed each year, and it was the seventh leading cause of death in the U.S. in 2006.

Diabetes Treatment is a Failure

Obviously the above statistics show that the approach to the treatment of diabetes is greatly flawed and can be construed as a failure. Looking back, diabetes has been recognised for hundreds of years and actually became known as a clinical entity in 1812. Since then, considerable advances have been made in recognising the underlying mechanisms contributing to the condition as well as in diagnosis, the monitoring of, as well as addressing its long-term complications. Currently, diabetes is classified into two major categories, type 1 and type 2. Type 1 is related to a lack of insulin production and type 2 is related to excess insulin. Regrettably, little progress has been made in the ability to curb type 2 conditions. (Polonsky, 2012). Fradkin, et al. stated that diabetes prevention is not widely practiced in the U.S. and that "the disease's

Hair Tissue Mineral Analysis Pathology

Nutritional, Herbal and Natural Medicines

Practitioner Education

Research and Development

staggering human and financial costs continue to grow." (Fradkin, 2012). As an example of what we are facing, recently a large federal study funded by The National Institutes of Health (NIH) was prematurely stopped two years ahead of schedule because the program was not found to be effective. The study, which was an intensive intervention in type 2 diabetes included over five-thousand individuals with type 2 diabetes, which were divided into two groups and followed over an eleven year period. The first group received intensive diet and exercise intervention while the second group did not receive any intervention. In designing this study it was expected that the intensive intervention group would have fewer heart attacks, strokes and cardiovascular deaths. However, it was found that there were no differences in the development of these conditions in either group. Further, the ACCORD study (Action to Control Cardiovascular Risk in Diabetes), while reporting that strict aggressive glycemic control in patients with type 2 diabetes reduced the risks of nonfatal heart attacks, it unfortunately found that there was an increase in death rates overall. (NEJM, 2011)

In our view, it appears that much of the problem with the failure for preventing type 2 diabetes is mainstream medicine's focus largely on the end-points of this disease, rather than focusing on causation and prevention. In fact, current goals for diabetes treatment is to lower high blood glucose levels, maintain glycemic control, weight loss, monitoring and treatment of high blood pressure and blood lipids. The long-term goals are for the prevention of, or treatment of problems that arise as a result of complications from diabetes. A critical issue that should strongly be considered is that "a one size fits all" public health policy approach for a population does little impact the condition on an individual basis.

Obesity does not cause Diabetes

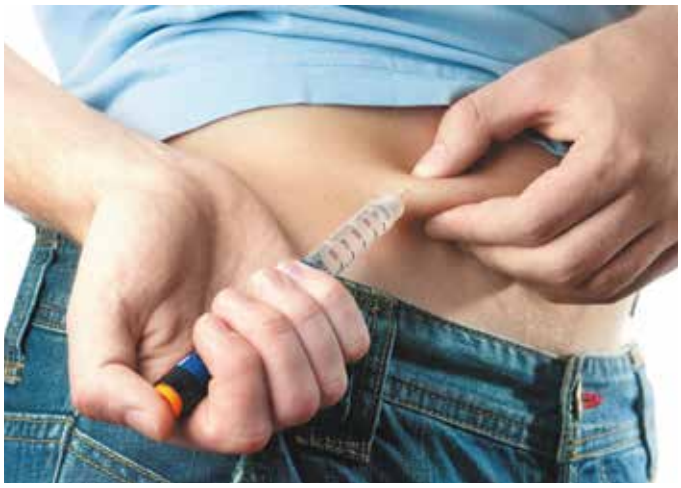
A common theme that one often hears is that being overweight causes type 2 diabetes. However, this is not correct. There is a great percentage of people who are overweight and yet do not have diabetes. In fact, a diabetic condition is what causes a person to often become overweight and even obese. This is due to the fact that in most cases individuals who have type 2 diabetes also have high levels of circulating insulin, or hyperinsulinism. Insulin is an anabolic hormone that inhibits the breakdown of fats (lipolysis) and promotes fat deposition (lipogenesis) causing significant weight gain in many patients with type 2 diabetes. It should also be noted that insulin therapy also contributes to weight gain.

Weight Loss does not Cure Diabetes

We do know that weight loss can help greatly in controlling diabetes, which is important. This mechanism is based on reducing body mass allowing a greater influence of insulin on the remaining cells. However, weight loss alone does not correct the underlying mechanism involving the loss of insulin cellular receptors. Therefore, it is inevitable that the condition would still exist and will eventually manifest clinically in the future, unless the underlying issue is addressed.

There are Different Causes of Diabetes

Probably the most common issue associated with the development of type 2 diabetes is the loss of insulin cellular receptors. This can be a result of diet, such as high sugar and refined carbohydrate intake. As blood glucose rises a loss of mineral chromium occurs. Chromium is a component in the insulin cellular receptors. A high insulin level also causes an increase in the loss of calcium. As insulin resistance continues,



insulin output steadily increases and remains high in most individuals who develop type 2 diabetes. The consequence of this is several fold. Insulin increases weight gain due to its anabolic action. Insulin also has a metabolic suppressing effect due to the antagonistic action on thyroid hormone and leads to vascular and cardiovascular issues due to lipid metabolism disturbance and vascular resistance.

Diabetes Types

Diabetes is classified into two major categories, type 1 and type 2. Type 1 is related to a lack of insulin production and type 2 is related to excess insulin production and comprises ninety to ninety-five percent of diabetic cases. However, diabetes can be further categorised according to their causation.

Type 3

In the past I have classified the other most common condition related to diabetes, which a large group of the population suffers from as type 2 diabetes. Approximately twenty to twenty-five percent of the diabetic population exhibit what has been commonly referred to as metabolic syndrome x. Metabolic syndrome although very similar to type 2 with many similar factors does not have the same mechanisms of development. This condition has been classified as an insulin-resistance condition, however it is actually more of a condition of insulin antagonism. (Watts, 2007)

Types 4, 5, 6, 7, 8. Endocrine Disorders

Gestational diabetes is also very similar to type two in that it also involves an insulin resistance component and can be classified as type 4. Gestational diabetes however, is more or less triggered by an oestrogen hormonal component. Typically as pregnancy progresses and oestrogen levels rise extraordinarily, the insulin level also rises. The hormone oestrogen is synergistic to insulin and typically as oestrogen levels rise so does insulin.

Polycystic ovarian syndrome (PCOS) can be termed type 5 and shares many mechanisms similar to syndrome x and has hormonal contributors, specifically androgens.

Pituitary diabetes is a result of a disturbance in the hypothalamus and or pituitary where a lack of antidiuretic hormone is released in the blood stream. This condition is often referred to as diabetes insipidus or central diabetes insipidus due to the production of excessive urine and related excessive thirst. Central diabetes can be termed as type 6 diabetes.

Adrenal diabetes is another endocrine condition contributing to blood sugar disturbances. Both adrenal insufficiency and hyperadrenocorticism can contribute to type 7 and type 8 diabetes respectively.

Type 9

Autoimmune conditions can contribute to diabetes and be classified as diabetes type 9. In this case, there can be similarity to the other types, but is associated with insulin antibodies resulting in diminished insulin sensitivity. Type 9 conditions can be triggered by infections, particularly viruses. Antibodies can eventually destroy insulin producing cells and lead to diabetes type 1 where insulin production is lacking or even nil. This form of commonly referred to as latent autoimmune diabetes of adults (LADA).

Type 10

Excess iron is known to accumulate in the liver and pancreas. Iron induced diabetes can be classified as type 10. Excess iron can also cause islet cell destruction due to damage from increased free radical production. This condition is typically related to copper deficiency as a co-component. The impact of excess iron on the liver is well known.

Diabetes Type 11 – Drug Induced Diabetes

There are many drugs that are known to cause diabetes. Rather than classifying them into separate categories we can lump them together as X-factors or type 11. Some drugs are known cause diabetes include: steroids, statins, antipsychotics, diuretics and antihypertensives.

Treatment should be Individualised

The reason that treatment and prevention of diabetes is a failure is that the condition is not approached on an individual basis. As can be seen, there are dozens of causes and therefore, a public policy that tries to fit an entire population simply cannot work. Underlying factors related to the development of type 2 diabetes are largely overlooked. A person does not suddenly become diabetic except on rare circumstances. The majority of people develop the condition over a long period of time following a sequence of underlying metabolic developments. It can take up to five years for type 2 diabetes to manifest clinically in predisposed individuals. The progression or stages in the development of type 2 diabetes can be illustrated as follows;

Normal / Hypoglycaemia / Dysinsulinism / Hyperinsulinism / Diabetes

Progression of each stage of this sequence has a distinct mechanism. A person does not typically go from a normal state to diabetes, but rather passes through each of these progressive stages. For example, hypoglycaemia leads to a disruption in normal insulin regulation eventually producing hyperinsulinism and ultimately type 2 diabetes. There can be many factors contributing to or underlying each stage that should be addressed specifically

Even with glycaemic control, if these underlying nutritional needs are not addressed the progression of diabetes and its many complications is inevitable in most cases. Lifestyle intervention studies designed to help patients with diabetes to lose weight found that weight loss did little to reduce cardiovascular events. Even the use of medications for glycaemic control revealed that cardiovascular events were actually higher with some forms of medications and a number of trials found that strict glucose control did not stop kidney complications from developing in patients with type 2 diabetes. Even strict control of blood pressure in diabetic patients did not lower cardiovascular events.

Targeted Nutrition, a Key Component for Prevention and Treatment

As we can see there are dozens of factors that can contribute to diabetes, even more than what has been discussed here. It has long been known that nutrition is an essential key component in the prevention and treatment of diabetes but is largely over looked except for broad, generalised recommendations that do not benefit the majority of individuals who develop diabetes. As mentioned previously, each stage of development involves a nutritional component that must be addressed for long term results.

Part Eleven of HTMA and the Lesser Known Trace Minerals

78
Pt
Platinum
195.084

Platinum

Chemical Structure

Platinum is a lustrous silvery-white, malleable, ductile metal and a member of group 10 of the periodic table of the elements. It has the third highest density, behind osmium and iridium.[1] It is chemically inert and will not oxidise in air at any temperature. It is resistant to acids and is not affected by any single mineral acid, but readily dissolves in aqua regia. When heated, platinum directly combines with elemental phosphorus, silicon, lead, arsenic, antimony, sulphur and selenium.[2] There are six naturally occurring isotopes: the most abundant are platinum-194, platinum-195 and platinum-196. The others are platinum-198, platinum-192 and platinum-190. The latter is weakly radioactive, with a half-life of 700 billion years, while the other five are non-radioactive.[1]

Sources

Environment

Platinum is one of the rarest metals, there are minimal concentrations of platinum in the air, soil and water at around a millionth of 1 percent of the Earth's crust. It is found in nature as the pure metal, also in alloys with other platinum metals; ruthenium, rhodium, palladium, osmium and most commonly with indium as platiniridium.[3, 12] Platinum is found in soil and river sediment in concentrations higher than average in areas that are highly industrialised. Air concentrations of Platinum have also been found to be higher close to freeways due to its use in auto catalytic converters.[4] It is known that Platinum accumulates in the roots of plants after uptake, the effects of this on plants and animals is not yet known.[6]

Diet

Platinum is present in our food in trace amounts. An Australian study[7] showed the concentrations were highest in eggs and offal (5.8ng/g*), then in decreasing order meat (3.2ng/g), grain products(3.2ng/g), fish(1.8ng/g), fruit and vegetables(0.82ng.g) and dairy products (0.27ng/g).

Absorption and Excretion

When ingested or inhaled, platinum metal and insoluable salts are very poorly absorbed and cleared from the body within a week after a single dose. Once in circulation, platinum compounds are cleared from the plasma by tissue uptake and excretion, and also by irreversibly binding to plasma proteins and metabolites. Most absorbed platinum accumulates in the kidneys and is largely excreted in the urine.[13]

Soluable platinum compounds such as Cisplatin is associated with renal toxicity and toxicity seems to correlate with stability of the compound in aqueous solution, with distribution half-life, and with cumulative 24 hour urinary platinum excretion.[7]

Functions and Applications

There are no known biological requirements for platinum.[8] It is used in dental and jewellery alloys, automatic catalytic converters, catalysts, electroplating, electronic parts, artificial pacemakers and laboratory equipment.[7,9] Platinum is commonly used to make catalysts, e.g. platinum catalysts are widely used in the petroleum industry. These catalysts break down the molecules, rearrange and form new patterns. Platinum is one of the most important catalysts for this job.

Platinum containing antineoplastics such as Cisplatin, Carboplatin and Triplatin are highly toxic to both healthy cells and cancerous cells, and cause crosslinking of DNA as monadduct, interstrand crosslinks or DNA protein crosslinks therefore causing replication arrest and cell death if the crosslink is not repaired.[7,10]

Toxicity and Excess

Human health effects from platinum at low level environmental levels, or at levels from low environmental exposures are unknown. Platinum as a metal is biologically inert; it is the soluable platinum compounds used in occupational settings that can cause platinum sensitivity symptoms.[12,13] Health effects from soluable platinum compounds include; DNA alterations, cancer, allergic reactions of the skin and mucous membranes, damage to organs (such as kidneys and intestines) and damage to hearing.[1]

Analysis in HTMA

High levels of platinum are not commonly seen in HTMA. In the case that there are high levels, this may indicate excessive and unnecessary exposure. Sources seen in HTMA are largely from mining, catalytic converters and jewellery making. Even though the reference range for Platinum in the hair has been established statistically, the level above the reference range that can be considered clinically significant has yet to be determined. While no toxic signs of platinum have been described, it will displace other essential elements, including magnesium and selenium.[1, 8]

*part per billion

To keep the body in good health is a duty... otherwise we shall not be able to keep our mind strong and clear.

Buddha