INDEPENDENT DIABETES TRUST
Type 2 and you
June 2021, Issue 47
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Welcome to the 47th issue of Type 2 & You

In this issue we look at the often prescribed, anti-diabetic drug metformin. We have some quick tips on holidaying while there are still warnings in place about covid-19 as well as a statement of IDDT's position about the increase in prescription charges. We continue to look at the 9 key tests you should be receiving and, in this issue, we look at serum creatinine. We have a piece on the surprising nutritional value of mushrooms as well as the health risks and benefits of taking a nap during the day. Also from a health perspective, we look at the management of gout and IDDT's role in the development of a new treatment for foot ulcers. Finally, we have a round-up of the most recently published research as well as the latest lottery winners.

Metformin

If there is a "typical" progression in the management of Type 2 diabetes then the first piece of advice most people receive is to make some lifestyle changes, such as, lose weight, exercise more and eat a healthy diet. While this advice in itself is not bad advice it may not be appropriate for everybody. For example, not everyone with Type 2 needs to lose weight and the vast majority of people with Type 2 cannot manage their diabetes by following this advice alone, at least not indefinitely. At this point, health professionals will start to give consideration to the introduction of medication. Alternatively, they may give consideration to starting medication immediately after diagnosis - enter metformin.

Metformin is usually the first line treatment for Type 2 diabetes. For some people, metformin works well over a long period of time but it may be that second and third-line medications need to be added in at some point. Other articles in this series focus on these drugs and we will talk about some of the combination therapies available later in this piece.

Metformin is part of a group of drugs called Biguanides. Biguanides have a wide variety of surprising uses, such as anti-malarials and disinfectants, but most notably in the treatment of Type 2 diabetes. Metformin is the generic name for the drug used to treat Type 2 diabetes but as with all medicines it has brand names, Glucophage and Yaltormin SR. ▶

The exact pharmacology of how metformin works is not known but what we do know are the effects it has on the body and how it helps to control Type 2 diabetes. In order to understand how metformin works and how it differs from other Type 2 drugs, it is helpful to know about the "typical" development and progression of Type 2 diabetes. In the early stages of Type 2 the body develops a condition called insulin resistance. This is when the pancreas is still producing insulin but the body is not able to use its own insulin properly, meaning that blood sugar levels rise. Metformin reduces this insulin resistance, allowing the body to use it effectively and blood glucose levels drop. Unfortunately, over time the pancreas tends to produce less and less insulin so other medications are introduced to increase insulin production which act alongside metformin to help control blood sugar levels.

There are many different combinations of drugs that can be used alongside metformin to help control Type 2 diabetes (far too many to mention them all here!!!) and you should discuss with your health professional which combination will suit you best.

As with any drug, metformin can have its side-effects, most commonly stomach upsets. In severe cases, these side-effects can be helped by prescribing a slow-release version of the drug. These versions of the drug usually have the same name as the regular version but the name is followed by the initials, either CR, MR or SR, indicating that it is a slow-release equivalent. That being said, metformin remains one of the most reliable and regularly prescribed drugs for treating Type 2 diabetes, with a long and proven track-history. Metformin is always presented in tablet form.

HOLIDAY TIPS

This year is another strange one but the holiday season is approaching and so is our possible freedom to go on holiday!

Whether staying in this country or going abroad, for families who live with diabetes, going on holiday means more planning and a bit more care when you are away. IDDT has a leaflet on Holiday Tips which contains information and useful tips for holidays whether at home or abroad.

Don't forget, since Brexit, if you are going abroad, you need at least 6 months on your Passport and it must not be more than 10 years old. Equally don't forget that if you have an in-date EHIC card (European Health Insurance Card) you can still use it but if it is out of date it needs to be replaced with an GHIC card (Global Health Insurance Card).

If you would like one of our leaflets on Holiday Tips, just call IDDT on 01604 622837, email enquiries@iddtinternational.org or write to IDDT, PO Box 294, Northampton NN1 4XS. The Holiday Tips are also on our website: www.iddtinternational.org

A Date for your Diary

Well, diaries continue to need to be flexible and at the time of writing, normality still looks a long way off. As ever, IDDT will endeavor to hold its annual event and its Annual General Meeting (AGM) but we appreciate that under current circumstances the format of these events may well need to change.

Regarding the event we are aiming to hold it on Saturday 23rd October 2021. However, this may not be feasible due to the number of people able to attend and the rules regarding lockdown. In July, when the situation is clearer, we will send you details about attending the event in October. If October is not feasible then we will look to moving the event to April 2022.

As for the AGM, you may or may not be aware, we have a legal obligation to hold this event. Again, we will consult you on how you wish to hold this meeting. One suggestion is that we hold the meeting via Zoom. We are also aware that this does not suit everyone so we would make transcripts of the meeting available to those who request them. As ever, we are open to suggestions.

PRESCRIPTION CHARGES WENT UP IN APRIL 2021

The Government have increased prescription charges in England by 20p to £9.35 per item. There are no prescription charges in Scotland, Wales and Northern Ireland. While IDDT is not a political body, we have to comment that at present when many people are having a very difficult time, it does not seem fair that prescription charges are going up.

In response to the new prescription charges, The Royal Pharmaceutical Society of Great Britain (RPS) England chair Claire Anderson said: "Raising prescription charges in England is totally unacceptable. The increase in cost will only add to the highly concerning levels of health inequalities in this country and no-one should be put in a position where they have to go without their medicines because they can't afford to pay."

Don't be kept in the dark...

Most of us will have heard the joke "Sometimes I feel like a mushroom. I'm kept in the dark and fed…" (ask a grown-up).

Joking aside, researchers have found good reasons to include mushrooms in our diet. Including a portion (84g or half a cup) of mushrooms can increase our intake of under-consumed nutrients, notably fibre, potassium and vitamin D. The consumption of vitamin D is important as it helps to keep bones, teeth and muscles healthy. It is produced when the skin is exposed to sunlight.

During the lighter months the body can usually produce all the vitamin D it needs. However, this may not necessarily be true during darker days, when supplements may be necessary. Research has shown that mushrooms are a good source of naturally occurring vitamin D. Importantly, mushrooms can be consumed without increasing calorie intake.

Over the last few years, the variety of mushrooms available from the supermarket shelf has increased dramatically and we are no longer limited to simple, white button mushrooms. Similarly, the number and range of recipes containing mushrooms has also increased and it is usually possible to cater for most tastes, so go on and try adding some mushrooms to your cooking.

DIABETES – YOUR 9 KEY TESTS EXPLAINED

PART 6

Serum Creatinine

This article is the next in our series of pieces looking at the 9 key tests a person with diabetes should expect. In this article we look at the tests for serum creatinine, its function and management.

WHAT IS CREATININE?

Creatinine is a chemical compound left over from energy-producing processes in your muscles. Healthy kidneys filter creatinine out of the blood. Creatinine is transported round the body in the blood and exits your body as a waste product in urine.

WHY TEST FOR CREATININE?

A test for the amount of creatinine in your blood provides clues to help your doctor determine how well your kidneys are working. The test is carried out by your doctor or health professional, ideally every twelve months and involves a blood test. The test can be used to highlight such issues as:

- Making a diagnosis if you have signs or symptoms of kidney disease.
- Screening for kidney disease if you have diabetes and/or high blood pressure that increase the risk of kidney disease.
- Monitoring kidney disease, treatment or progression.
- Monitoring for side effects of drugs that may cause kidney damage or altered kidney function.
- Monitoring the function of a transplanted kidney.

TEST RESULTS

The results are expressed as a numerical figure. Serum creatinine is reported as micromoles of creatinine to a litre of blood (micromoles/L). The typical range for serum creatinine is:

- For adult men, 65.4 to 119.3 micromoles/L.
- For adult women, 52.2 to 91.9 micromoles/L.

CREATININE CLEARANCE

Creatinine clearance is a measure of how well the kidneys filter creatinine out of the bloodstream for excretion in urine.

Creatinine clearance is usually determined from a measurement of creatinine in a 24-hour urine sample and from a serum sample taken during the same time period. However, shorter time periods for urine samples may be used. Accurate timing and collection of the urine sample is important.

Creatinine clearance is reported as millilitres of creatinine per minute per body surface area (mL/min/BSA).

The typical range for men, 19 to 75 years old, is 77 to 160 mL/min/BSA.

The typical range, by age, for creatinine clearance in women is as follows:

- 18 to 29 years: 78 to 161 mL/min/BSA
- 30 to 39 years: 72 to 154 mL/min/BSA
- 40 to 49 years: 67 to 146 mL/min/BSA
- 50 to 59 years: 62 to 139 mL/min/BSA
- 60 to 72 years: 56- to 131 mL/min/BSA

Results lower than the typical range for your age group may be a sign of poor kidney function or conditions that affect blood flow to your kidneys. Your doctor or other health care provider will discuss the results of a creatinine test with you and help you understand what the information means for a diagnosis or treatment plan.

TREATMENTS FOR KIDNEY FAILURE

There are several treatment options available to those with reduced kidney function. It needs to be remembered that impaired kidney function, caused by conditions such as microalbinuria, do not necessarily mean inevitable kidney failure.

Early treatments tend to be aimed at reducing blood pressure, thereby limiting the progression of kidney damage. The use of ACE inhibitors (angio-converting enzyme inhibitors) is common under these circumstances. As we have said, kidney damage can be caused by high blood pressure damaging the blood vessels. ACE is an enzyme that activates a hormone called angiotensin which causes blood vessels to constrict, raising blood pressure. ACE inhibitors prevent the action of angiotensin, thus resulting in the lowering of blood pressure.

Each kidney contains about one million nephrons to carry out the filtration of waste products. While the kidneys can compensate for the loss of some of these cells, once a certain amount of tissue is lost, the remaining nephrons can no longer cope and kidney function declines. Under these conditions the kidneys can be classed as failing and more intense treatments may be necessary:

- Dialysis. There are two forms of dialysis which remove excess water and can keep you fit and well while you are waiting for a transplant. The most suitable type of dialysis for you will depend on medical factors.
- Transplantation. Kidney transplants are a treatment option with both positive and negative outcomes. Transplants can reduce the constraints of regular dialysis and restores a 'normal' lifestyle. However, there is a shortage of donor organs and the possibility of post-operative rejection are frequent problems.
- Kidney and pancreas joint transplantation may also be considered as an option.
- Dietetic advice on what foods to eat may help you feel better.
- Medications from your doctor to help with other problems, such as blood pressure and fluid retention may help.

NAPPING

TO NAP OR NOT TO NAP

Most adults need at least seven to nine hours of sleep a night. Many people don't allow themselves adequate time for sleep but if you have Type 2 diabetes, it's critical that you do so, just as you do other activities. Expert opinion is that we should never think sleep isn't as important as watching TV or talking on the phone. Another thing to keep in mind is that it's important not to overdo it with naps. Naps should be kept relatively short, around 20 minutes, and limited to the early afternoon. Napping any later is likely to throw off your ability to get to sleep at night.

Researchers have said that napping in the day may have mixed health benefits in people with Type 2 diabetes.

A complex relationship exists between sleep and diabetes, so Japanese researchers investigated how midday naps were associated with night-time sleep duration and blood sugar control.

The findings may suggest that people with Type 2 diabetes who slept for short periods of time at night benefitted from napping in the day. Midday naps appeared to compensate for lost sleep at night, and reversed associated negative health effects, such as poorer blood sugar control.

Those who slept for six hours or more were also found to have better sugar control, compared with those who got less than five hours sleep at night. However, those who slept for long periods at night and also slept in the day were shown to also have poor blood sugar control.

Overall, the data collected, suggested that poor sleep patterns were linked to poor blood sugar control in people with Type 2 diabetes.

The researchers concluded: "Midday naps may be harmful to many health status parameters in long night-time sleepers, but in short night-time sleepers, midday naps may have protective effects in specific circumstances."

Diabetes & Gout

WHAT IS GOUT?

Gout is a type of arthritis that causes sudden, severe joint pain. Gout is caused by a condition known as hyperuricemia, where there is too much uric acid in the body. The body makes uric acid when it breaks down purines, which are found in your body and the foods you eat. See a GP for treatment to help during an attack and to stop further attacks. See a GP if you have:

- sudden severe pain in a joint – usually your big toe, but it can be in other joints in your feet, hands, wrists, elbows or knees.
- hot, swollen, red skin over the affected joint.

Ask for an urgent GP appointment or call 111 if:

- the pain is getting worse.
- you also have a very high temperature (you feel hot and shivery).
- you also feel sick or cannot eat.

WHAT'S THE CONNECTION BETWEEN DIABETES AND GOUT?

Scientists aren't sure exactly why gout and diabetes are related. However, research has shown how strong the link is.

In one study, researchers looked at the health records of people who participated in the Framingham Heart Study They found those with higher uric acid levels in their blood were more likely to get Type 2 diabetes.

Another report included more than 35,000 people with gout. Scientists found that women with gout were 71% more likely to get diabetes. Men with gout had a 22% higher chance.

TREATMENT

Although the link between diabetes and gout is well established, treatment of a gout attack for a person with diabetes will almost certainly focus on treating the gout. However, if the gout attacks become persistent or frequent (chronic gout) then the doctor may want to look more closely at factors relating to diabetes management, such as blood glucose levels. In the first instance attacks of gout are usually treated with a non-steroidal anti-inflammatory drugs (NSAID) like ibuprofen. If the pain and swelling does not improve you may be given steroids as tablets or an injection.

Just a reminder about the general use of steroids – they can cause adverse effects, just one of which is the rise in blood sugars and so people with diabetes need to have their blood sugars well managed.

To manage and prevent gout and diabetes it is important to keep your uric acid and blood sugar under control. As with many things, prevention is better than cure and also, as with many things, habits and lifestyle are important:

- Eat a healthy diet. Include plenty of fruit, vegetables and whole grains but avoid red meat, shellfish, sugary food and drink. Low-fat dairy foods may have a protective role so they can stay on the menu.
- Drink lots of water. Drink at least 8 cups of water a day to help your body get rid of uric acid. Good hydration is also important if you want to keep healthy blood sugar levels.
- Lose weight. Less body fat can lower your uric acid levels and improve your blood sugar. But don't fast or try a crash diet. Quick weight loss can raise uric acid.
- Exercise. Try to get at least 30 minutes of physical activity a day. Exercise can help you stay at a healthy weight, which makes gout and diabetes less likely.

Bits and Pieces

The table below is designed to summarise the research that has been published in the last 12-18 months. We would normally report on research more frequently but with the events of the last few months this has not always been possible.

This research has been presented in table form to make it easier to digest. The first column lists the drug/area of interest to which the research relates. The second column lists the group that is being compared to and/or the area of research being looked at. The third column gives a brief summary of the results of the research. For example, the primary drug could be a GLP1 RA compared to a secondary drug, an SGLT2 and thirdly, the conclusions regarding the effects of each e.g. on kidney function.

Below are the drugs most commonly featuring in research:

- Gliptins / DPP-4 inhibitors, typically ending in "Gliptin"
- GLP-1 Receptor Agonists, typically ending in "Glutide"
- SGLT2s, typically ending in "Flozin"

Primary drug/ Area of research	Secondary drug/ Area of research	Conclusions
Sitagliptin/Metformin	Disease progression	Co-starting Sitagliptin and Metformin slows the progression of T2 compared to adding in Sitagliptin at a later date.
Linagliptin/metformin	Combination therapy	Analysis suggests that the early combination therapy of linagliptin and metformin can help to lower HbA1c without increasing the risk of hypoglycaemia or other adverse effects.
SGLT2s	Kidneys	Studies have shown that use of SGLT2 s can reduce kidney complications/disease.
Liraglutide	Added-on to SGLT2s	Prescribing liraglutide as an add-on to SGLT2s improves blood glucose control regardless of whether or not metformin is taken as well.
Semaglutide	Systematic review	Oral semaglutide can reduce blood glucose levels, weight and systolic blood pressure. It can increase the frequency of gastrointestinal upset.
GLP-1 RAs	Cardiovascular outcomes	Review suggests that GLP-1RAs are safe, are well tolerated, and improve cardiovascular outcomes but they remain underused by cardiologists.
Not specified	Fractures	Research showed that people with T2 are at greater risk of fractures than those without T2.
Dapagliflozin	Atrial fibrillation	Dapagliflozin decreased the incidence of reported episodes of AF adverse events in high-risk patients with Type 2 diabetes.
Liraglutide as opposed to empagliflozin	When used as an add-on to insulin therapy	Liraglutide addition to insulin therapy more effectively reduced glycated haemoglobin (HbA1c) in those with inadequately controlled Type 2 diabetes.

- A study recently published in The Lancet has argued that people with Type 2 diabetes are no more at risk of dying from Covid 19 regardless of the anti-diabetic medication they are taking and as such, there are not sufficient grounds to change medication and indeed, the negative outcomes of such changes may outweigh the benefits.

THE IDDT'S LOTTERY DRAW WINNERS

We are delighted to announce the winners of our latest monthly lottery draws. They are as follows:

Winners of the January 2021 draw are:

1st prize of £568.00 goes to Matthew from Basingstoke
2**nd prize of £426.00** goes to Anon. from York
3rd prize of £284.00 goes to Michael from Blackpool
4th prize of £142.00 goes to Anon. from London

Winners of the February 2021 draw are:

1st prize of £554.40 goes to Jane from Letchworth
2nd prize of £415.80 goes to Anon. from Colchester
3rd prize of £277.70 goes to Patricia from Waltham Abbey
4th prize of £138.60 goes to Anon. from Chesterfield

Winners of the March 2021 draw are:

1st prize of £552.96 goes to Anon from Mirfield
2nd prize of £414.72 goes to Vernon from Port Talbot
3rd prize of £276.48 goes to Anon from Weymouth
4th prize of £138.24 goes to Mary from Cardiff

Note: The winners of the draws for April, May and June 2021 will be announced in our September 2021 Newsletter and on our website. A huge 'Thank You' to everyone who supports IDDT through the lottery.

If you would like to join in for just £2.00 per month, then give us a call on 01604 622837 or email jo@iddtinternational.org

If we can be of help in any way, please contact:

InDependent Diabetes Trust (IDDT), PO Box 294, Northampton NN1 4XS Tel: 01604 622837
email: enquiries@iddtinternational.org Or visit our website: www.iddtinternational.org

IDDT Director nominated to join NICE Consultation

IDDT Non-executive Director Dr Gary Adams (Nottingham University Associate Reader) has been nominated to join the NICE Medtech Information Briefing on the 3C Patch. Medtech Information Briefings (MIBs) are NICE advice and they are designed to support NHS and social care commissioners and staff who are considering using new medical devices and other medical or diagnostic technologies.

The 3C Patch System is a biological patch made from a person's own blood and is used to treat foot ulcers in people with diabetes. Blood is drawn directly into the 3C Patch System, which is then placed in the 3CP centrifuge and spun for about 20 minutes. This can be done on-site or in the clinic.

The 3C Patch is placed on the wound and covered with a wound dressing, which is kept in place for 7 days as the patch dissolves. The company recommends using 3C Patches for 4 weeks to 6 weeks.

Gary will take up the role of Expert Patient and will have the opportunity to submit a personal statement before the meeting telling the committee about experiences of the condition and its treatment.