



Drugs induced thrombocytopenia

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Introduction

This booklet addresses the complex issue of drugs and thrombocytopenia. It is intended to help adults and children diagnosed with ITP (immune thrombocytopenia) to identify products which can cause a low platelet count and to avoid drugs that may make bleeding problems worse. This information should not replace the advice of your doctor or pharmacist and you should always discuss any issues of concern with your GP or consultant.

Drugs causing problems are divided into two main classes:

1. Drugs that can cause platelet destruction.

Patients who have been diagnosed with ITP should check that the low platelet count is not caused by an immune reaction to a drug taken for another condition.

2. Drugs that can cause impaired platelet function.

Patients with an established diagnosis of ITP should avoid taking certain drugs that can prevent their functioning platelets from working efficiently.

This booklet also:

- clarifies drug names.
- suggests where to seek further advice if you are unsure about any medications that you have been prescribed or may wish to take.
- covers what information you should give to your doctor, nurse or pharmacist and what questions you should ask of them.

Drug names can be confusing

Most drugs have two main names in addition to their chemical name:

- a generic (non-proprietary) name, which is non-commercial
This name is given to identify the type of drug and tends to be international.
- a brand (proprietary) name which is a commercial name and often specific to a particular country or manufacturer.

To take an example, you may recognise Anadin Extra, which is a brand name in the UK. The generic names of its ingredients are aspirin, paracetamol and caffeine. A drug may be made by

different manufacturers and be given two, three (or even more) brand names.

If you travel and have to go to a foreign pharmacy, a drug may have a different brand name, as local brand names may vary. Always check the generic name and the drug dosage before taking any drug given to you in a foreign country.

TIP! Make a note of the generic names of your drugs in English and carry their names with you when you travel.

Drugs that cause a low platelet count

Drugs can cause a low platelet count via an allergic reaction, but such reactions are uncommon and are not necessarily a reason for patients with thrombocytopenia to avoid essential medication. Sometimes a similar drug can be substituted that does not cause the same reaction.

A low platelet count caused by a drug is not the same as ITP, which usually arises for no known reason (idiopathic). Drug-induced (iatrogenic) thrombocytopenia is more common in adults (who generally take more drugs than children) and the platelet count typically returns to normal within a week if the drug is stopped.

Many patients with drug-induced thrombocytopenia may be initially diagnosed as having ITP, so it is important for patients on medication (whether prescribed or over-the-counter) to be suspicious if they are unexpectedly found to have a low platelet count. This may be a reaction to a drug and should be discussed with the patient's doctor. On very rare occasions a patient may have an intolerance to a particular food which has caused their platelet count to drop.¹

TIP! Be suspicious of medicines/remedies you are taking if you are suddenly found to have a low platelet count.

It is important to try to identify any drug that may have caused the low platelet count. Unnecessary treatment for thrombocytopenia may be avoided if the drug can be discontinued, however a balance of risks has to be assessed and it may not be advisable to stop or change essential medication, despite the thrombocytopenia.

If a doctor suspects drug-induced thrombocytopenia, he may advise the patient to stop all their medicines, or prescribe alternatives for those that are essential. This should also

include stopping all over-the-counter medicines, herbal and 'natural' remedies. Where there is, or has been, a pattern of intermittent thrombocytopenia, patients may wish to keep a diary of medicines or remedies they have been taking to see if this correlates with their symptoms, such as bruising or bleeding. If food intolerance is suspected a detailed food diary should also be kept.

Drugs that have a strong association with a low platelet count include:

- quinine (used in malaria treatment for malaria, muscle cramps, popular beverages, such as tonic water and bitter lemon)
- anti-cancer (chemotherapy) drugs
- quinidine
- some antibiotics (sulphanamides)
- heparin

Drugs that have a less strong association include:

- alpha methyl dopa (an old fashioned treatment for high blood pressure)
- rifampicin (anti-TB therapy)
- diclofenac (an anti-arthritis drug)
- carbamazepine (an anti-epilepsy drug)
- gold salts (used in rheumatoid arthritis)

Drugs which cause a less marked reduction in platelets include:

- thiazide diuretics (e.g. bendrofluazide)
- co-trimoxazole (an antibiotic)
- cimetidine and ranitidine (anti-ulcer drugs)
- digoxin (for heart arrhythmias)
- tamoxifen (used in breast treatment)

Food and drink causing low platelets

Alcohol in large quantities can also cause a low platelet count. On rare occasions a certain food has been known to cause low platelets in an individual, but these are very individual reactions. This has included beans, citrus fruits, tahini oil and cow's milk. Some patients who develop coeliac disease in addition to ITP find that a gluten free diet improves their platelet count. However it must be stressed that such cases are isolated and often unconfirmed in medical analysis.

Drugs that interfere with platelet function

Some drugs can make platelet coagulation less effective (i.e. unable to stick together or to seal blood vessels) which will increase the possibility of bleeding. Since licensed drugs are forever changing it is not possible to give a complete, up-to-date, list of those which should be avoided.

Patients with low platelets should generally avoid all NSAIDs (Non-steroidal anti-inflammatory drugs). The list includes: aspirin; ibuprofen (e.g. Nurofen); dexibuprofen; diclofenac; meloxicam; nabumetone; prioxicam; tenoxicam; tolfenamic acid; keterolac; parecoxib.

Many products that can be bought 'over the counter' contain NSAIDs. For example, Anadin Extra contains aspirin, paracetamol and caffeine. Therefore before buying any branded product always read the Patient Information Leaflet to check the ingredients or if in doubt ask the pharmacist. This is very important. If you have a condition that requires NSAIDs your GP may be able to suggest alternatives.

TIP! Avoid NSAIDs, unless taken on your GP's advice. There are many over-the-counter products which contain these drugs. Talk to the pharmacist first.

Parents Beware:

- Aspirin should not be given to any child under 16 (with or without ITP). This is due to the suspected association between aspirin and Reye's syndrome.
- Calprofen contains ibuprofen (an NSAID) and is not safe for children with ITP.

However:

- Calpol contains paracetamol and is safe to give to children with ITP.

Remember:

- Always read the leaflet that accompanies all drugs. This will state who should not take the drug and who should talk to their doctor first.
- If the leaflet states, people with hæmophilia or people taking medicines that reduce blood clotting should not take this product, it would be sensible to check with your doctor or the pharmacist first. (These recommendations may be listed for hæmophilia or patients taking 'blood thinner' medicines simply because they are more common than ITP.)

• Drug interactions are listed on all information leaflets which should be read in case you are taking any of the named drugs. Do not mix drugs which are contraindicated.

TIP! Read the Patient Information Leaflet to see who should avoid the drug and which other medicines should not be taken with it.

Drugs for some medical conditions reduce platelet function:

- Patients who require heart catheterisation after a heart attack are prescribed abciximab or similar to prevent platelets sticking together (known as platelet aggregation). Abciximab and related drugs can cause a sudden fall of the platelet count, which recovers within a few days. If this occurs, the patient will not be prescribed that drug again.
- Antiplatelet drugs, such as aspirin and clopidogrel, are used to reduce blood clotting in ischaemic heart disease or vascular disease.
- Anticoagulants, such as heparin, prevent blood clotting and are routinely given as an injection before and after general surgery to prevent blood clots forming in deep tissues. It is also necessary treatments for patients with venous thrombosis, such as deep vein thrombosis of the leg (DVT), or thrombosis in the lungs (pulmonary embolism).
- Non-steroidal anti-inflammatory drugs, (NSAIDs – see above), are used to treat a variety of conditions, including high temperature, pain, inflammation and blood clotting.

The above drugs may not be suitable for someone with a low platelet count, but this depends on circumstances. For example, someone with ITP who has symptoms of a heart attack or stroke may be given anti-platelet drugs to stop the platelets clumping together, even though their platelet numbers may be reduced.

Patients undergoing surgery are routinely given heparin during a hospital stay nowadays to reduce the risk of deep vein thrombosis. The risks of DVT versus reduced platelet count should be discussed with your haematologist and surgeon. If you are advised not to have heparin ask for a notice to be put over your bed, as it could be administered before you have recovered from the anaesthetic. If you are worried that hospital staff may do this without your permission (when drowsy from an anaesthetic, for example) put your own notice by the bedside saying you have ITP and should not be given anticoagulant drugs.

TIP! If you are prescribed drugs for other conditions do remind your hospital consultant, GP or nurse that you have ITP.

What to tell health professionals

If you are unsure about the drugs suggested for you, or you think that drugs you are already taking have caused your ITP, speak to:

- Your doctor (GP or consultant), or the practice nurses.
- Your pharmacist (especially for products bought in the pharmacy).

Alternatively, for those with internet access, Professor James George (ITP Support Association medical advisor) has created and updates an invaluable database of drugs (from published patient responses) that cause a low platelet count. These have been analysed according to the strength of evidence linking the drug with thrombocytopenia and set out in tables. Visit: <http://www.ouhsc.edu/platelets> (select 'Drug-induced thrombocytopenia' from the left hand panel).

Information to give health professionals and others

Tell the doctor, nurse, dentist, paramedic which drugs/products you are taking. This includes: prescription medications, over-the-counter drugs, and any complementary products; in fact anything that you take on a regular basis. Make a list and carry it with you (an ITP Emergency Card² may be helpful).

- Update your dentist regularly with your medical details and ensure that he/she has the ITP Support Association's leaflet, Protocol for Dentists.³ For dental procedures your dentist may wish to consult your hæmatologist.
- Paramedics are unlikely to be aware of your ITP, so if you need emergency treatment at home or elsewhere, and are conscious, remind them about your ITP and the fact that any drug affecting platelet function could be dangerous for you. If you are unconscious the paramedic will look for medical information you may be carrying (an ITP Emergency card or alert jewellery⁴)
- If you go to Accident and Emergency tell the triage nurse and the doctor that you have ITP and the drugs you take.
- Your doctor may be interested to know about Professor George's website list of drugs that are linked to thrombocytopenia (see web address above).
- If you stay in hospital remember that you should not be given a routine injection of heparin unless your consultant thinks it is necessary.
- Parents of a child with ITP should tell the school/clubs not to administer ibuprofen.

TIP! Ask the ITP Support Association for a free ITP Alert Card and for a form to obtain your personalised Emergency Card

What to ask your doctor or pharmacist

- Does this product contain aspirin or any other non-steroidal anti-inflammatory drug (NSAID). These often include 'fen' in the name?
- Is this product safe for someone with a bleeding disorder?
- Can I take this product with my other medications (a written list may be helpful).

Summary

- 1) Always discuss drug concerns with your doctor or pharmacist.
- 2) Beware of drugs that can affect platelet function. Such as:
 - aspirin
 - NSAIDs
 - heparin and all other anticoagulants.
- 3) Beware of drugs that can reduce platelet levels. Such as:
 - quinine (used for muscle cramps)
 - some anticonvulsant drugs (e.g. valproate, carbamazepine)
 - some antibiotics (e.g. linezolid, vancomycin and sulfonamide antibiotics)

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¹ *Food Intolerance & ITP* – I ITP Support Association leaflet

² Emergency Card – personalised laminated card with your details and next of kin. Ask the ITP Support Association for a form.

³ *Protocol for Dentists* – ITP Support Association leaflet for your dentist

⁴ *Alerting the Alert* – ITP Support Association leaflet comparing medic alert jewellery and cards.

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