

The Changing Nature of Healthcare Series

Toxins in Your Medicine Cabinet

Many of the medications that we have in our closets and medicine cabinets may have more than one effect on your body. One of the most popular drugs that we use is Tylenol, one of the best-selling over-the-counter medications, used by more than 200 million Americans a year. More than 200 medications use Tylenol/acetaminophen (also known as paracetamol) such as Excedrin, Midol, NyQuil, and Sudafed and prescription drugs such as Vicodin. Although Tylenol is a great pain reliever, it can be toxic (poisonous) in large quantities. In fact, it can cause liver failure and today is the major cause of liver failure even more than alcoholism. More than 50,000 visits to an Emergency Department are made annually and hundreds of people die as a result. There was an effort made by various consumer groups to force manufacturers of acetaminophen based products to print a warning on the boxes, but the effort was unfortunately, defeated.

The recommended maximum dose is 4000 mg (4 grams) for adults, which would be the amount in eight extra strength tablets. This may seem like a large amount but many people in pain or those who have the flu take 2 Tylenols (1000 mg) every few hours and may also use cough or sinus medicine with acetaminophen and easily exceed the “safe” dosage.

Furthermore, most people rapidly develop a tolerance to the drug and need increasingly stronger doses to have any relief. It is quite common for people to pop three or more pills at a time with no idea of the potential danger. Swallowing 7-10 grams at once could cause liver toxicity. If a person has been fasting or suffering from dehydration, the dose is even lower (Think about that next Tisha Ba’Av). What is worse is that certain other drugs, such as alcohol, can cause an even more drastic effect. When someone has a hangover from too much beer and wine, they will often resort to pain killers such as Tylenol, Excedrin or Vicodin. The combination of the two drugs can be lethal.

Acetaminophen poisoning has three stages. During the first 12-24 hours after taking the drug, a person may experience nausea and vomiting. During the second phase, from 24-48 hours, the person usually feels better. After 48-72 hours, however, liver enzyme (ALT and AST) levels start to rise, indicating liver injury. In the most severe cases, a person may develop acid buildup in the blood, excessive bleeding, and coma. At this stage, only a liver transplant can prevent death.

The following tips can help prevent acetaminophen-related liver toxicity:

- Do not take more than the recommended dose of 4 grams within a 24-hour period (for example, 12 regular strength or 8 extra strength Tylenol tablets)
- Do not take the full day’s dose at one time; space it out over the course of the day
- Do not take acetaminophen for more than 10 days in a row
- Avoid drinking alcohol; this is important for people with hepatitis whether or not they use acetaminophen
- People who do consume 2-3 alcoholic drinks per day should not take more than half the usual recommended dose of acetaminophen (2 grams within 24 hours)

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- People with advanced liver fibrosis or cirrhosis should avoid acetaminophen
- Write down how much acetaminophen you take, and when, if you have trouble remembering
- Check the labels of all medications; small doses of acetaminophen in combination remedies can add up to big trouble.

Liver inflammation is measured by an increase in liver enzymes beyond a certain range. It can be mild or so severe that it presents as jaundice (often seen as yellow instead of white around the pupils). Often, the inflammation can be reversed by removing the primary offenders and providing nutritional support. In any situation, an inflamed liver cannot fully defend itself against incoming toxins. So treating the inflamed liver may be comparable to securing the tent flap after the mosquitoes have flown in.

Sometimes the underlying cause of liver inflammation is not clear and can leave patients scouring their surroundings for hidden toxins. Furthermore, two people with a seemingly equal exposure to one particular toxin may respond differently, prompting the question, who is at risk?

Who Is at Risk?

Do genetics increase susceptibility? Yes.

Can liver inflammation be due to exposure to other toxins? Yes.

One example is that certain occupations such as landscaping, dentistry, and cosmetology are associated with exposure to toxins, and some data suggest increased risk of liver inflammation as well. Most of us are exposed to a broad variety of poorly characterized toxins at varying doses, a situation that does not lend itself to public health studies. A common one are the chemical cleansers used for your stove.

Do diet choices beyond alcohol use increase risk? Yes.

Avoid trans fats and refined carbohydrates. Sugar is converted into fat and can increase liver enzymes in short order. Smoking tobacco also increases the risk.

Can Medications Contribute to Liver Inflammation? Yes, as illustrated by a large list of medications, which include the following:

- Lamisil (terbinafine) oral tablets are prescribed to treat fungal nails. The benefits of the medication should be weighed with the side effects, which include increased liver enzymes.
- Tamoxifen is taken by breast-cancer survivors to prevent disease recurrence. Elevated liver enzymes in a breast-cancer survivor can signal metastatic disease, so if Tamoxifen is identified as the cause it is viewed as comparatively good news. However, it also suggests that a medication could promote recurrence of the very disease it is prescribed to prevent.

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- Hormonal contraception (birth control pills) can increase liver enzymes. Sometimes it is prescribed to maintain regular menstrual periods in women with **polycystic ovary syndrome**, a condition that is worsened by liver inflammation.
- Antipsychotic medications originally reserved for treating schizophrenia and bipolar mania in adults are now prescribed, off-label, to treat children for behavioral problems and ADHD. Tragically, these medications are sometimes prescribed before comparatively straightforward and evidence-based dietary interventions, such as cutting sugar and trans fats. The consequences of the metabolic side effects of these medications in children are large and appear to be lifelong.

Many other Over-the-counter (OTC) drugs are a significant cause of illness in the United States. Although the shelves of every major drug store and grocery store are heavily stocked with these common medications—and they are used millions of times every day—few people are aware of the dangers posed by common OTC medications, especially nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen and naproxen. Acetaminophen and NSAIDs commonly cause serious liver and gastrointestinal side effects, yet most people have no idea how dangerous they can be.

Part of this ignorance is because these strong medications are available without prescriptions, and heavy television and magazine advertising has perhaps given the impression that cold medicines, pain killers, antihistamines, and other ubiquitous drugs are safe. In fact, OTC medications as a category are responsible for more than 150,000 hospitalizations every year, according to the Food and Drug Administration, and almost 1000 OTC medications have been linked to liver toxicity, which causes about 2000 deaths annually in the United States.

NSAIDs and Aspirin

NSAIDs: NSAIDs are common medications used to reduce pain and inflammation. They are available as both OTC medications (e.g., ibuprofen and naproxen, or Aleve®) and prescription drugs (e.g., cyclooxygenase enzymes, some of which are called COX-2 inhibitors). Because of the increased risk of heart attack and stroke, several prescription COX-2 inhibitors, including Vioxx® and Bextra®, were removed from the market. OTC NSAIDs, however, were not implicated in these studies and so remain widely available. All told, more than 30 billion doses of NSAIDs are consumed annually in the United States alone. Ibuprofen, the most common OTC NSAID, can be found in scores of products or as a single-formulation drug. Even at nontoxic levels, NSAIDs damage tissue in the gastrointestinal tract, inhibit the function of platelets (blood cells that aid in coagulation and homeostasis), and alter kidney function.

NSAIDs work by inhibiting cyclooxygenase (COX-1 and COX-2) enzymes, which convert arachidonic acid to pro-inflammatory prostaglandins (Schoenfeld P et al 1999). OTC NSAIDs are not selective inhibitors of COX enzymes; they inhibit both COX-1 and COX-2.

The gastrointestinal side effects caused by NSAIDs are due to their ability to inhibit COX-1. COX-1 is responsible for protecting the stomach through mucus production and immune cell defense, maintaining blood flow and kidney function, and processing sensations. When these functions are compromised, the stomach lining is vulnerable to damage.

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Aspirin: Aspirin is widely used for pain relief and has side effects and contraindications similar to those of NSAIDs. It is very important that people do not use aspirin and NSAIDs together unless directed by a physician. Like NSAIDs, aspirin can cause gastrointestinal upset.

Aspirin is used to relieve mild to moderate pain and to reduce fever, redness, and swelling. In low doses, it can be used to help prevent blood clotting. It is used to relieve discomfort caused by numerous medical problems, including headache, infections, and arthritis.

The widespread intake of NSAIDs results in approximately 107,000 hospitalizations annually for gastrointestinal complications and 16,500 deaths for arthritis patients. The risk of digestive upset, ulcers, and liver damage from NSAIDs may increase for people who drink alcohol regularly. Increased risk associated with NSAID toxicity is also associated with the following:

- being older than age 65
- being female (women are more common users)
- smoking
- having high body mass index
- having diabetes, cardiovascular disease, or hypertension

NSAIDs cause their gastric side effects by inhibiting the COX-1 enzyme. This causes mucus production to decrease in cells lining the gastrointestinal tract, leaving it vulnerable to gastric acid, bile, enzymes, and alcohol. Gastrointestinal injury ranges from heartburn, nausea, and abdominal pain to serious complications such as ulcers, hemorrhage, and tears in tissue

Symptoms of Overdose

- The most common symptoms of NSAID and aspirin overdose are heartburn, nausea, abdominal pain, ulcers, or even gastric perforation. However, many people with gastrointestinal complications from NSAIDs exhibit no symptoms and may even have normal endoscopic exams.

Nutritional and Supplemental Protection

- People who take acetaminophen and OTC NSAIDs regularly should be aware that these drugs can cause liver and kidney toxicity. When you are taking these drugs, it is a good idea to provide antioxidant support to the liver and kidneys to protect them from the oxidant by-products caused by their metabolism.
- Supplements that can be consumed in conjunction with acetaminophen include antioxidants such as selenium, vitamins E and C, alpha-lipoic acid, and nutrients such as S-adenosyl-L-methionine and NAC, which increase levels of glutathione. In addition, milk thistle extract has been shown to protect the liver and is widely used for degenerative liver diseases such as cirrhosis, which, like acetaminophen overdose, is associated with decreased levels of liver antioxidants.

The following drugs or drug classes deplete vitamins/minerals or other nutrients and can lead to severe health concerns:

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Pepcid, Tagamet, Zantac, Prevacid, prilosec, statins (such as Lipitor, Zocor etc) Antidepressants, anti-diabetic drugs (eg, Glucophage) Most anti-hypertensives (lower blood pressure), Diuretics, BetaBlockers Steroids (cortisone, Prednisone etc) Contraceptives, Premarin and tranquilizers

NOTE – Diuretics are some of the worst drugs in that they deplete critical minerals especially calcium, potassium, sodium and magnesium as well as many B vitamins. These can lead to very severe symptoms that can lead to paralysis, heart attacks, anemia and even death. What is worse is that most doctors pay these issues no mind and will tell you not to worry. And they will add, not taking the drugs will be worse. On rare occasions, they may suggest using some supplements. So be smart on take your own multivitamin and minerals.

This article has been written by Bernard Rabinowicz, a naturopathic doctor trained in medicine (pathology, pharmacology, cardiology, rheumatology, immunology, gastroenterology, neurology, psychiatry, surgery, etc) as well as certified in non-conventional healing methods (herbal, homeopathic, hypnosis, reflexology, color puncture, biofeedback and bio-therapeutics).

Take control of your health
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