

Autoimmune Disease and Drug-Drug Interactions



By Amy Ehlers, BS, PharmD, BCPS

Patients with autoimmune diseases who often take multiple medications can take a number of steps to prevent adverse drug events.

There were over 3.7 billion prescriptions dispensed in the United States in 2010, along with \$17 billion in over-the-counter (OTC) drug sales and \$5 billion in natural supplements. With each prescription that leaves the pharmacy or OTC/natural supplement that is purchased, there exists a potential for a drug interaction. In a study published in the Dec. 24/31, 2008, issue of the *Journal of the American Medical Association*, University of Chicago researchers interviewed approximately 3,000 individuals ages 57 to 85 about their use of prescription and OTC drugs and dietary supplements, and found that one in 25 was potentially at risk of having a major drug-drug interaction.

According to the Centers for Disease Control and Prevention's National Center for Health Statistics, in 2004,

nearly half of all Americans were taking at least one prescription medication, and one in six individuals was taking three or more. With autoimmune diseases, patients are almost guaranteed a drug therapy regimen that comprises multiple medications to treat the various manifestations of the disease. For instance, multiple sclerosis (MS) is an immune-mediated inflammatory disease that attacks myelinated axons in the central nervous system, destroying both the myelin and the axons. The treatment for MS involves drug therapy for both the underlying immune disorder and the symptoms of the disease, which usually include fatigue, numbness, tingling and muscle spasms or weakness. This means that a typical MS patient may take four or more medications on a regular basis to help manage their disease.

Distinguishing Between Side Effects and Adverse Drug Events

It is important to distinguish between a side effect and an adverse drug event. A side effect, which also may be referred to as an adverse drug reaction, is an expected and known effect of a drug that is not the intended therapeutic outcome. These may decrease over time or be significant or serious enough to warrant changing the drug therapy. An adverse drug event, on the other hand, is an injury that occurs from using a drug at a normal dosage and may occur from the use of one drug or the interaction between two or more agents.



To better illustrate the differences between side effects and adverse drug events, let's look at the drug gabapentin (Neurontin). This drug is frequently prescribed to help treat nerve pain. Common side effects of gabapentin include dizziness, drowsiness and visual disturbances such as blurred or double vision. These are considered side effects because they are predicted outcomes of using the drug and typically decrease over time. This is why many patients, when beginning gabapentin therapy, are slowly titrated to reach their optimal dose. By giving the body an opportunity to slowly adjust to the gabapentin, these side effects are usually far less severe than if the full dose is started initially. A known adverse drug event exists between gabapentin and naproxen (Aleve, Naprosyn). When naproxen is taken together with gabapentin, the absorption of gabapentin is increased. This means that a patient who was once on a stable dose of gabapentin with little to no side effects may suddenly complain of things such as dizziness or blurred vision. If the naproxen use is limited, these will resolve, but if the naproxen use continues long-term, the gabapentin dose may need to be decreased.

Preventing Adverse Drug Events

A number of things can be done to help prevent adverse drug events.

Become educated. Patients need to take the time to become educated about each medication that they are prescribed. By law, each time a new prescription is dispensed, the pharmacist must make the offer to counsel on the medication. Many people visit the pharmacy at the end of a long day that may have gone like this: The appointment is at 9 a.m., and the patient arrives at the physician's office at 8:45 a.m. They sit in the waiting area until 9:15 a.m., when they are taken back to have vital signs taken and then told to go back to the reception area to wait again. At 10 a.m., they are taken back to an examination room, where they sit patiently until 10:30 a.m., when the doctor appears. At 11 a.m., they are ready to leave the physician's office to head to the lab to have the ordered lab tests done. At the lab, because they didn't have an appointment, they wait until almost 12:30 p.m. to have blood drawn. They then grab a quick lunch and then drive to the pharmacy to have their prescription filled around 1 p.m. The pharmacy technician tells them that it won't be ready for a while, so they walk around the store and wait. When their name is finally called at 3 p.m., they rush to the counter to pick up the medication and when the pharmacist asks if they have any questions and attempts to counsel them on the new prescription, they say: "I'll read the information when I get home." They then sign the log that declines counseling and finally head home.

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Reading the drug information sheets may seem to be the easiest thing to do, yet according to a 2007 article in the *Journal of the American Pharmacists Association*, 50 percent of all patients throw them away at home without reading them. By skipping the information about the expected side effects and other medications and OTCs to avoid, they have placed themselves at a much higher risk to experience a drug interaction or adverse effect of the medication.

Communicate. If a new drug is started and something

doesn't feel right, patients need to speak up! A perfect example of the need to communicate is an MS patient who is using any of the interferon beta drugs (Avonex, Betaseron or Rebif). Depression and/or suicide ideation of attempt is a well-documented risk with any of these products. While it is not uncommon for patients dealing with a chronic illness to manage or experience episodes of depression, if this is something that is new to them, they need to talk to their physician or pharmacist. The depression most likely can be controlled, allowing them to have an improved quality of life.

Follow directions. It's important for patients to follow the directions given to them by their physician or pharmacist regarding their medication and any required lab tests or follow-up visits. For instance, many drugs that rheumatoid arthritis patients use have a risk of causing liver dysfunction, especially methotrexate. If their physician recommends having their liver enzymes checked on a routine basis (perhaps every three months), patients should make sure to keep those lab appointments so that they can be appropriately monitored. People often don't see signs of liver failure until significant damage has been done. Another example is with the tumor necrosis factor blocker medications such as adalimumab (Humira), etanercept (Enbrel) or infliximab (Remicade). These medications increase the risk of tuberculosis or hepatitis B, particularly in patients with a prior history of these diseases. Patients should disclose any prior history of exposure or treatment of these illnesses and be tested for active disease prior to initiating these specific drug therapies.

Dealing with Multiple Physicians

Trying to prevent adverse drug events can be a greater challenge when there are multiple physicians involved in a patient's healthcare. If each physician is not fully aware of all prescription, OTC and herbal items that a patient is currently using, it becomes more difficult to safely adjust their medication therapy.

A few things can be done to help with this. One is to maintain a thorough and updated list of all medications, both prescription and OTC, and herbal items currently being taken with the name, dose, frequency, reason for using and date started. For every physician appointment or admission to the hospital, providing this complete medication history may help prevent a patient from being a victim of one of the 1.5 million medication errors that occur in the United States each year.

Providing this list to the pharmacy is important as well. If a patient is unable to have all their medications filled by

one pharmacy, which is ideal, they should make sure that each pharmacy has the complete list of those medications, as well as which pharmacy is dispensing what medication. Specialty pharmacies find this especially useful, as often they are treating only one portion of a patient's disease. Without the patient telling them their routine medications, they may find it difficult to help fully participate in the

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patient's healthcare team. In addition, if the patient is unable to keep a complete medication list as suggested, they or any of their treating physicians can always contact the pharmacy to have them provide this list on their behalf.

Another important thing that a patient can do when a new medication is added to their drug regimen: Ask why. Is the proposed drug treating an old problem in a new way, or is it treating a new symptom that just started? If it is treating a relatively new concern, it may be possible that this is a temporary side effect that may resolve with time, or the current regimen may need a dose adjustment. Adding a new drug is not always the best choice and may not be needed in some instances.

Always a Risk

With any medication, there is a chance that there will be a drug interaction or side effect. This is something that is often referred to as "risk versus benefit." The important thing for patients to remember is that just because there is a possibility of risk, it does not mean that it will occur, and with proper steps and management, the risk can be significantly decreased. ■

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