

Pain Management: Watch That Tylenol

We commonly prescribe combinations of Tylenol (acetaminophen) and opiates for control of acute pain. The combination is complementary and can control pain better than either drug alone. However, problems arise if patients/healthcare professionals do not remain aware of the acetaminophen content in the preparation. Failure to do so can result in exceeding the recommended daily maximum of acetaminophen and put the patient at risk for toxicity.

People often underestimate acetaminophen's ability to damage the liver. In fact, acetaminophen is the most common cause of drug induced liver failure. Taken acutely, just 10 grams can cause life-long liver problems and 20 grams can be fatal. Although many acute overdoses represent "suicide attempts", chronic use of greater than the maximum recommended dose of 4000mg/day has resulted in accidental toxicity in many patients, particularly those taking multiple medications that contain acetaminophen. In pain management, this may also occur when patients increase intake of combination opiate-acetaminophen preparations to control their pain, without considering the acetaminophen content.

How does acetaminophen cause damage? Most acetaminophen is conjugated in the liver to form inactive metabolites. A small portion is metabolized by the cyto-chrome P-450 system to form N-acetyl-p benzoquino-neimine (NAPQI). NAPQI is very toxic, but it is quickly detoxified by glutathione and converted into nontoxic compounds. Large doses, however, saturate the main route of metabolism causing more acetaminophen to be converted to NAPQI. Liver injury occurs once glutathione becomes depleted and NAPQI is allowed to build up. Certain patients have an increased risk of developing liver toxicity from acetaminophen, including those who fast or have inadequate protein intake and those who use alcohol. Both alcohol and starvation deplete glutathione stores, and alcohol induces cyto-chrome P-450 enzymes, increasing the formation of NAPQI. In long-term alcohol users, as little as four grams in 24 hours can cause liver toxicity. Liver toxicity can also occur in moderate or "social" drinkers. Patients who consume more than two alcoholic drinks a day should avoid regular or excessive acetaminophen use. The use of drugs that induce cytochrome P-460 enzymes also increases the risk of toxicity. These drugs include barbiturates, Phenobarbital, hydantoins (Dilantin, etc.), carbamazepine (Thgretol), rifampin (Rifadin), isoniazid and sufinpyrazone.

The acetaminophen content of several commonly used pain relievers at Ocala Regional Medical Center are shown below, along with the number of tablets that may be given in a 24-hour period before 4000mg of acetaminophen is exceeded.

Remember, addition of cold product combinations, acetaminophen PM for fever, etc, also add to the total daily count – these numbers would need to be reduced further if other preparations containing acetaminophen are given.

Medication – 24 hour limit

Darvocet N-100 (6).....	650 mg
Vicodin (8).....	500 mg
Lortab 7.5 (8)	500 mg
Lorcet 10 (6)	650 mg
Tylenol #2, #3, or #4 (13)	
.....	300 mg
Percocet 5 mg (12)	325 mg
Talacen (6)	650 mg

WATER

- 75% of Americans are chronically dehydrated. (Likely applies to half the world population.)
- In 37% of Americans, the thirst mechanism is so weak that it is mistaken for hunger.
- Even MILD dehydration will slow down one's metabolism as much as 3%.
- One glass of water will shut down midnight hunger pangs for almost 100% of the dieters studied in the University of Washington study.
- Lack of water is the #1 trigger of daytime fatigue.
- Preliminary research indicated that 8 to 10 glasses of water a day could significantly ease back and joint pain for up to 80% of sufferers.
- A mere 2% drop in body water can trigger fuzzy short-term memory, trouble with basic math and difficulty focusing on the computer screen or on a printer page.
- Drinking five glasses of water daily decreases the risk of colon cancer by 45%, plus it can slash the risk of breast cancer by 79% and you are 50% less likely to develop bladder cancer.