



Think before you drink: Interactions between alcohol and OTC medicines

Lynn Lambert, BPharm
Amayeza Information Services

The access to over-the-counter (OTC) medicines offers a convenient way for patients to be actively involved in their own health and self-treatment of certain illnesses. The range of medicines available OTC, however, is more restricted compared to prescribed medication, and additional restrictions such as indications, doses and duration of treatment are often placed on these medicines. There is a tendency for the public to perceive OTC medicines as safer due to their being easily accessible but it must be stressed that, like all medicines, OTC medicines have the potential for harm, misuse, abuse and also may have the potential for addiction and dependency. In addition, OTC medicines can interact with other medicines as well as substances such as alcohol. This article will focus on the interactions between alcohol and OTC medicines.

Not the ideal mix

Alcohol is the second most abused drug after nicotine and its potential for interactions is mainly due to its actions on the central nervous system as a depressant. Additionally, it has the ability to reduce the thinking, decision-making and memory of an individual.

OTC medicines are typically well-tolerated and effective when used appropriately. However, it cannot be assumed that combining these medicines with alcohol is not harmful. The combination can further exacerbate the effect of OTC medicines such as drowsiness, light-headedness, dizziness, and affect concentration. In addition, driving under the

influence of alcohol plus certain medicines can put one's life at risk. Certain medicines, such as nonsteroidal anti-inflammatory drugs (NSAIDs), can cause gastrointestinal irritation and consuming alcohol when taking such medicines can worsen this effect as well as increase the risk of gastric (stomach) ulcers.

There are two types of interactions with alcohol

Pharmacodynamic interactions occur when medications cause drowsiness and this effect is increased by the concomitant use of alcohol. This is known as an additive effect. The additive effect can interfere with the ability to concentrate, make reasonable judgements and impair driving ability.

Pharmacokinetic interactions occur when processes involved in the breakdown of food, drinks, medicines and alcohol by the liver changes. Various chemical reactions using enzymes are involved in the metabolism of medicines and alcohol, resulting in competition for these liver enzymes between the medicines and alcohol. These interactions can cause some medications to be less effective (by enzyme induction), or to build up, causing toxic effects (by enzyme inhibition) – both resulting in an impact on patient health.

Some of the effects of combining alcohol with certain medicines include:

- nausea and vomiting
- headaches
- drowsiness or sleepiness
- dizziness and fainting
- blood pressure changes (with prescribed medicines)
- uncharacteristic behaviour
- poor or loss of coordination
- accidents

Factors that influence the interaction of alcohol and medicines

Ingredients: Certain OTC medicines including analgesics, cough, cold and allergy preparations may contain more than one ingredient that can interact with alcohol. Certain

medicines such as cough syrups may also contain alcohol and can add to the effects of alcohol if the patient also consumes other forms of alcohol.

Gender: Women are at increased risk of the interacting effects of medicines and alcohol because females have a lower per cent of water in the body and a higher per cent of body fat. As such, females do not break down alcohol as efficiently as men, leading to higher blood alcohol levels after consuming the same amount of alcohol. As such, the risk for interactions and side effects when alcohol is combined with certain medicines is increased in women.

Age: Older people are at a higher risk for harmful alcohol-medication interactions. Since aging slows down the body's ability to break down alcohol, it remains in the body longer in older patients. Due to their age and likely medical conditions, older patients may take many different medications which increase the risk for interactions with alcohol. The added effects of alcohol and medicines on the central nervous system includes drowsiness, dizziness, confusion and the risk for falling and injury.

Points to note

- There are many different medicine combinations and formulations available OTC and if there is any doubt or concern regarding interactions, it is recommended to

discuss with the pharmacist before dispensing to the patient.

- Alcohol has the potential to worsen the adverse effects or reduce the effectiveness of OTC medicines and therefore, patients should be cautioned accordingly.
- Medicine labels should always be checked for any alcohol content or any ingredient that may interact with alcohol, to ensure patient safety.
- Certain OTC medicines may remain in the body over a period of time (duration of action), therefore consuming alcohol even hours later can still have adverse effects.
- If patients are on any medication that has the potential to interact with alcohol or if there is doubt as to whether an interaction exists, patients should be advised to rather avoid consuming alcohol for the duration of their treatment.
- The interacting effect of alcohol on certain OTC medicines is not limited to chronic or excessive alcohol use. Therefore, patients should be advised that even 'social' alcohol consumption poses the same risks.

It is important that patients understand the potential risk of combining certain medicines with alcohol. The pharmacist assistant is in the ideal position to caution patients against mixing medicines with alcohol in order to promote patient well-being and the safer use of OTC medicines.

Commonly used OTC medicines that may interact with alcohol		
Treatment or disease area	Ingredient	Possible reactions with alcohol (non-exhaustive list)
Allergies Colds and flu	Antihistamines*: • loratadine • diphenhydramine • desloratadine • chlorpheniramine • cetirizine • brompheniramine • promethazine • rupatadine	Drowsiness Dizziness Increase risk of overdose * Some patients have experienced sedation with the "non-sedating" antihistamines and therefore, the same cautions regarding concomitant alcohol intake apply.
Analgesics and anti-inflammatories	Celecoxib Naproxen Diclofenac Aspirin Paracetamol Ibuprofen	Increased risk of gastrointestinal irritation Liver damage Upset stomach
Cough preparations <i>Some cough mixtures contain up to 40% alcohol and regular use aggravates or can lead to alcoholism</i>	Dextromethorphan Guaifenesin + codeine Pholcodine	Drowsiness Dizziness Increased risk of overdose
Heartburn Indigestion	Cimetidine Ranitidine Omeprazole	Alcohol effects may be increased such as drowsiness and dizziness Chronic alcohol use may worsen gastrointestinal symptoms
Motion sickness	Cinnarizine Cyclizine Doxylamine succinate	Drowsiness Dizziness Increased risk for overdose
Sedatives	Doxylamine succinate Diphenhydramine	Increased drowsiness and dizziness

Bibliography

1. Anderson LA. Drug and Alcohol Interactions – What to Avoid. Available from: www.drugs.com [Homepage on the internet] 2019. Cited 30 January 2020.
2. National Institute on Alcohol Abuse and Alcoholism. Harmful Interactions. Mixing alcohol with medicines. 2014.
3. Cooper RJ. Over-the-counter medicine abuse – a review of the literature. Journal of Substance Use. 2013;18(2):82-107.
4. Erickson AK. Know before you mix: Counseling patients about alcohol-drug interactions. American Pharmacists Association. 2015.
5. Rossiter D. South African Medicines Formulary. 12th Edition. 2016.