A BIT ABOUT BENZODIAZEPINES

Benzodiazepines are used for the short-term treatment of anxiety and insomnia. They are also used in minor surgery, as anticonvulsants, muscle relaxants, adjuncts in reducing mania, and in alcohol withdrawal.

Benzodiazepines increase the activity of the inhibitory neurotransmitter, GABA (gamma-aminobutyric acid). GABA dampens down the activity of many neurons, including those in brain circuits associated with fear, anxiety and wakefulness. More specifically, benzodiazepines stimulate GABA by binding with the GABA-A receptor. This receptor has a complex structure and is made up of many different subunits. Benzodiazepines can only bind GABA-A receptors that contain certain subunits. The alpha subunits seem to be particularly important in mediating the action of these drugs. Specifically, the alpha-2 and alpha-3 subunits appear to play an important role in the reduction of anxiety, while the alpha-1 subunit may be more important in sleep. Benzodiazepines can act on all of these subunits.

The addictive potential of benzodiazepines is well-known. However, the risk of physical and psychological dependence is generally low when the drug is used for a short period of time (less than 2-4 weeks) at low or moderate doses.

SOME OF THE SIDE EFFECTS

Side effects of benzodiazepines include drowsiness/sedation, dizziness, slurred speech, ataxia, blurred vision, retrograde amnesia and mild cognitive impairment. These cognitive deficits may not be fully reversible. In some people, benzodiazepines can also cause psychiatric side effects, including hallucinations, depression, paradoxical excitation, aggression and disinhibition. Disinhibition tends to be more common with short-acting drugs. The use of benzodiazepines has also been associated with impaired driving ability, as well as falls and hip fracture in the elderly.

 Withdrawal symptoms can occur where physical dependence has developed. Symptoms include anxiety, insomnia, restlessness, irritability, nightmares, gastrointestinal disturbance, weakness and stiffness. In more severe cases, depression, paranoia, delusions, hallucinations, delirium and seizures may occur. The risk of withdrawal symptoms can be reduced by tapering the dose slowly and by switching the patient to a drug with a long half-life (e.g. diazepam) during withdrawal.

FOR EXAMPLE:

• Alprazolam (e.g. Xanax)
• Bromazepam (e.g. Lexotan)
• Clobazam (e.g. Frisium)
• Diazepam (e.g. Valium)
• Flunitrazepam (e.g. Hypnodorm)
• Lorazepam (e.g. Ativan)
• Nitrazepam (e.g. Mogodon)
• Oxazepam (e.g. Serepax)
• Temazepam (e.g. Normison)
STIMULANTS & BENZODIAZEPINES

HOW STIMULANTS WORK

Stimulants include drugs like cocaine, amphetamines and ecstasy (MDMA). These drugs can increase feelings of alertness, confidence, wellbeing and heightened concentration. However, as the high subsides a person can start to feel tired, mildly depressed, nauseous and grumpy.

These drugs act on the central nervous system. Cocaine and amphetamines flood the brain with dopamine, while ecstasy acts on dopamine, serotonin and noradrenaline.

The specific ingredients in the drugs are often unknown, which presents the greatest risk – it depends on who manufactured them and where. It is often the case that a person doesn’t know what they are getting and this obviously makes it difficult to predict the types of interactions it may have with other drugs or medications.

SOME FUN FACTS ABOUT STIMULANTS

<table>
<thead>
<tr>
<th>THE GOOD</th>
<th>THE BAD</th>
<th>THE REALLY BAD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feelings of wellbeing and heightened concentration</td>
<td>Anxiety or panic can be exacerbated</td>
<td>Heart problems, particularly related to increased blood pressure &amp; heart rate</td>
</tr>
<tr>
<td>Increased energy and confidence</td>
<td>Can trigger depression, particularly during the come down</td>
<td>Increases the likelihood of stroke and other prolonged mental health problems</td>
</tr>
<tr>
<td>Feelings of alertness, strength, love and intimacy</td>
<td>Dehydration, increased body temperatures and difficulty eating</td>
<td>Can lead to tolerance and dependence, anxiety or disrupted sleep patterns</td>
</tr>
</tbody>
</table>

STIMULANTS & BENZODIAZEPINES

This resource provides general advice regarding some of the potential interactions between stimulants and benzodiazepines. Stimulants include cocaine, amphetamines and ecstasy (MDMA). It is important to note there may be additional or different interactions depending on genetic factors, the amount, type and purity of the stimulants being consumed or if your patient is taking other types of drugs.

There are few notable drug interactions between benzodiazepines and stimulant drugs. However, as cocaine can sometimes be sedative at high doses, over-sedation may occur in heavy cocaine users. The greatest risk is when a person is coming down off drugs and take a sedative to assist them to sleep. Patients can be at risk of over-sedation and respiratory depression when the stimulant wears off.

BENZODIAZEPINES & OTHER PRESCRIPTION DRUGS

Combining benzodiazepines with sedative drugs can lead to respiratory depression, coma and death, especially if multiple sedatives are used together. Some sedative medicines that may be problematic in combination with benzodiazepines include tricyclic antidepressants, antipsychotics, opioids and antihistamines. Benzodiazepines should be used with particular caution with clozapine (increased risk of cardiopulmonary depression and delirium) and methadone (risk of respiratory depression and increased methadone levels).

Various medicines can increase the concentrations of particular benzodiazepines; patients should be monitored for increased adverse effects such as sedation and ataxia. Disulfiram, oral contraceptives, valproate, modafinil and fluvoxamine can increase the plasma concentrations of diazepam, while some calcium channel blockers, erythromycin, fluvoxamine and nefazodone can increase alprazolam levels. Many antiretrovirals can also increase benzodiazepine levels. SSRIs may also exacerbate and prolong benzodiazepine-induced hallucinations.