Medical Xpress

Mixing opioids and alcohol may increase likelihood of dangerous respiratory complication

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Taking one oxycodone tablet together with even a modest amount of alcohol increases the risk of a potentially life-threatening side effect known as respiratory depression, which causes breathing to become extremely shallow or stop altogether, reports a study published in the Online First edition of *Anesthesiology*, the peer-reviewed medical journal of the American Society of Anesthesiologists (ASA). Elderly people were especially likely to experience this complication, the study found.

"Unfortunately, we're seeing more fatalities and people in emergency rooms after having misused or abused legally prescribed opioids, like oxycodone, while having consumed alcohol," said Albert Dahan, M.D., Ph.D., study author, professor of anesthesiology and head of the Anesthesia and Pain Research Unit at Leiden University Medical Center, Leiden, the Netherlands. "Respiratory depression is a potentially fatal complication of opioid use. We found alcohol exacerbated the already harmful respiratory effects of opioids."

Oxycodone is commonly prescribed to treat chronic pain and can be highly addictive. According to the National Institute on Drug Abuse, more than 2 million Americans abuse opioids. Additionally, every day 78 people die from opioid overdoses, according to the Centers for Disease Control and Prevention. A growing number of reports indicate that many of these opioid-related deaths involve other substances, often alcohol.

In the study, researchers examined the effect taking oxycodone in combination with alcohol had on breathing in 12 healthy young volunteers (ages 21 to 28) and 12 elderly volunteers (ages 66 to 77), who had not been chronically taking or who had never taken opioids. On three separate occasions, volunteers were given one 20 mg oxycodone tablet combined with an intravenous infusion of ethanol (alcohol). To allow researchers to continuously evaluate the safety of participants, the amount of ethanol was increased with each visit - from placebo on the first visit, to concentrations of 0.5 g/L (approx. 1 drink in women and 3 drinks in men) during the second visit and 1 g/L (approx. 3 drinks in women and 5 drinks in men) during the third visit as measured through the volunteers' breath. Baseline respiratory measurements were taken before drugs were administered. Resting respiratory variables, minute ventilation - the amount of air the volunteers breathed per minute - and the number of times volunteers temporarily stopped breathing were obtained at regular intervals during treatment.

One oxycodone tablet reduced baseline minute ventilation by 28 percent, while the addition of 1 g/L of ethanol caused minute ventilation to further decrease by another 19 percent - a total decrease of 47 percent. The combination of ethanol with oxycodone caused a significant increase in the number of times volunteers experienced a temporary cessation in breathing - ranging from 0 to 3 events with no ethanol versus 0 to 11 events at 1 g/L of ethanol (measured by breath). Overall, researchers found a synergistic effect between opioids and alcohol on breathing and, most importantly, on the number of times an individual temporarily stopped breathing. This was especially true in the elderly population, who were more likely to experience repeated episodes where they temporarily stopped breathing. The authors note, this was likely due to the older volunteers' inability to recover quickly and lack of physiological reserve.

"We hope to increase awareness regarding the dangers of prescription

opioids, the increased danger of the simultaneous use of opioids and alcohol, and that elderly people are at an even greater increased risk of this potentially life-threatening side effect," said Dr. Dahan. "Ultimately, people should know that it is never a good idea to drink alcohol with opioids."

Provided by American Society of Anesthesiologists

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