



LIFE THREATENING HALLUCINATIONS AND IN A COMMERCIAL DIVER TAKING VARENICLINE (CHANTIX) FOR SMOKING CESSATION: A CASE REPORT.



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INTRODUCTION: Chantix is a recently developed medication for smoking cessation that has been available by prescription since 2006. In clinical trials, adverse effects included insomnia, abnormal dreams, and headaches. Serious adverse events were rare. Post marketing surveillance has raised many new questions about the safety of Chantix. There have been multiple case reports of serious psychiatric symptoms occurring after initiation of Chantix, including: hallucinations, agitation, depressed mood, suicidal ideation, and psychosis. In 2008, the US FDA issued a public health advisory note and required the manufacturer to revise the labeling. It now includes a warning about possible adverse psychiatric side effects, including: agitation, hostility, depression, changes in behavior thinking or mood, anxiety, panic, aggression, anger, mania, abnormal sensations, hallucinations, paranoia, and confusion. Patients are advised to use caution driving or operating heavy machinery until they know how Chantix will effect them. The safety of Chantix use by commercial divers in a saturation environment is the topic of this case report.

SATURATION DIVING: Saturation diving is a technique used in commercial diving to allow divers to remain at great depths continuously for days to weeks. To accomplish this, the divers are kept in a pressurized living container that is pressurized to the depth the divers are working. At the end of the period of saturation diving, the divers are decompressed slowly to surface pressure. Since the divers tissues are saturated with inert gas, a slow gradual decompression is required to avoid decompression sickness, commonly called "the bends." It typically takes a full 24 hours of gradual decompression for every 50 feet of depth. If a diver is brought to surface pressure suddenly, severe and even fatal decompression sickness will occur. Because of this, only relatively young, physically and psychologically healthy individuals are cleared to participate in saturation diving, as any medical or psychiatric emergency that occurs while in saturation would have to be treated inside the saturation chamber, where treatment options are severely limited. Stricken divers cannot be taken to a hospital until they are decompressed to surface pressure, which can take several days. Because of the forced isolation in a self-contained environment, saturation diving is analogous to space travel. There is no quick rescue if an emergency arises.



Inside of a Typical Saturation System

Divers may live here for 2-4 weeks.



CASE REPORT: 33 year old experienced commercial diver who began having hallucinations while being stored in a saturation environment (depth of 170 feet).

PAST MEDICAL HISTORY: The patient had a history of hypertension only.

SOCIAL HISTORY: The patient was unemployed for the preceding three months. He had been drinking about 3-12 beers daily during this period.

MEDICATIONS: Varenicline , amlodipine/valsartan

SYMPTOMS: His initial symptoms occurred after two days in the saturation system. The hallucinations were initially mild, consisting of seeing small animals roaming around the chamber. His hallucinations then became more bizarre and alarming. Over the next 24 hours, he described seeing winged creatures trying to break into the saturation chamber to harm him. He also saw dead family and friends. He became aggressive and threatening, at times trying to escape the decompression chamber and tampering with the valves. He did not respond to multiple doses of orally administered Valium, and eventually required restraints to prevent harm to himself and his bell partner. The patient eventually was decompressed to surface over 4 days. His symptoms slowly resolved after return to the surface.



Transfer Bell: Used to transfer divers from work site to living quarters.

POST-DIVE EVALUATIONS: He had negative neurologic and psychiatric evaluations. His Head CT was negative, and no past or present history of psychiatric illness was found. The patient was evaluated by an independent hyperbaric medicine specialist and the dive company's dive medicine specialist. Both felt that cortical decompression sickness was unlikely to be the cause of the patient's psychosis. The hyperbaric consultant, psychiatrist and the dive medicine specialist felt an adverse reaction to varenicline was most likely the cause of the patient's symptoms. A clinical psychologist felt the patients symptoms were from alcohol withdrawal. It is not clear if the symptoms were triggered or exacerbated in any way by the prolonged hyperbaric exposure. The patient stopped the varenicline and abstained from further alcohol use. There was no reoccurrence of the symptoms, and he was cleared to return to work without restriction

DISCUSSION: Saturation diving is extremely complex and expensive. It places incredible physical and psychological demands on the diver because of the prolonged isolation at depth and prolonged time to rescue. Only the healthiest divers should be approved to work in this environment. This case presents a diver who developed psychotic symptoms while taking varenicline. It is not clear if the psychosis was caused by varenicline, alcohol withdrawal, cortical decompression illness or a combination of these factors. Most of the previous case reports of severe psychiatric symptomatology associated with varenicline occurred in patients with pre-existing psychiatric illness. There has been no evidence thus far that shows a cause and effect relationship. Nicotine withdrawal has also been associated with case reports of psychosis. This patient had no previous psychiatric history. He also had no prior history of alcohol withdrawal symptoms with sudden cessation of alcohol use. His symptoms did not resolve with administration of Valium like typical symptoms of alcohol withdrawal. Although it is impossible to state unequivocally that varenicline was the cause of this patients symptoms, there have been enough numerous similar case reports of severe psychiatric symptoms developing in patients taking varenicline that the FAA has banned its use by pilots and air traffic controllers, the military prohibits its use by flight and missile crews, and the Federal Motor Carrier Safety Administration warned medical examiners not to qualify anyone using varenicline for commercial motor vehicle licenses.

CONCLUSION: The use of varenicline in the saturation diving environment should be discouraged until its safety is established by further research.