Anesthetic Drug Abuse by Anesthesiologists

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Summary: Jungerman FS, Palhares-Alves NH, Carmona MJC, Conti NB, Malbergier A – Anesthetic Drug Abuse by Anesthesiologists.

Background and objectives: Physicians has a slightly higher rate of psychoactive substance use when compared to the population in general. Anesthesiology is one of the most affected medicine specialties, especially due to overwork and easier access to drugs. This paper aims to carry out a literature review on the topic. Therefore, research was conducted by searching topic-related keywords on papers from the last 30 years available on MEDLINE.

Content: Despite the fact that alcohol abuse is the most common among anesthesiologists, the abuse of anesthetic agents causes more concern, due to its high dependence potential and consequences, which are often fatal. The most widely used drugs are opioids (fentanyl and sufentanil), propofol and inhalational anesthetics. Young professionals are the most affected. Among the consequences of drug abuse are workplace absence and even death. The return to operating rooms seems to increase the risk of relapse. In Europe and in the USA there are specialized treatment programs for the middle class, as well as preventive measures, such as strict control of drugs and identification of professionals at high risk of abuse. In Brazil, Anesthesiology is the second medicine specialty with most drug addicts, but the topic has not been much studied and there are few specialized programs in the field.

Conclusions: Substance abuse by anesthesiologists is an issue that needs to be discussed further, especially due to the possibility of severe consequences for professionals and patients.

Keywords: Absenteeism; Anesthesiology; Mortality; Occupational Diseases; Opioid Related Disorders; Physicians.

INTRODUCTION

The use of psychoactive substances is slightly higher among physicians if compared to the general population [1,2].

Among physicians, anesthesiologists have more problems with psychoactive substance abuse, making it the most prevalent occupational risk in this group [3].

There are many difficulties in identifying the problem, such as a fear of consequences and lack of technical and emotional skills to make the diagnosis [4].

Physicians do not feel comfortable interfering in a colleague's personal life and they usually have little understanding of the issue [5]. This fact creates a 'silence conspiracy' involving family members, colleagues and the doctor [6]. When the substance user is someone who has a higher rank, others fear punishment when tackling the problem. On the other hand, family members recognize the problem but are afraid to reveal it in the workplace due to financial and occupational consequences. The belief that substance dependence is a choice and not a disease can also divert attention from the problem [7].

Substance abuse is one of the major causes of stress among anesthesiologists' chiefs of service, in addition to issues related to attendance, accreditation, budget, failing at the university and social security audit [8]. Related mortality is significant [9], as well as resulting occupational difficulties.

Such a situation requires a thorough debate. This paper aims to provide a review of the studies on psychoactive substance abuse among anesthesiologists, especially those concerning anesthetic agents, considered as special concern and a source of increased deaths among these professionals.

METHOD

In order to evaluate the issue of substance use among anesthesiologists in the last 30 years (1980-2010), a bibliographical survey was carried out on the MEDLINE database. The keywords used were *opioid*, *physicians, substance abuse, Anesthesiologists* and *occupational mortality*, and the language filters were English and Portuguese. During the search by keywords, 60 studies in English and Portuguese were selected from the database.

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RESULTS

Epidemiology

The prevalence of impaired physicians due to substance use is 10% to 12%. This prevalence is higher than in the general population for alcohol and two controlled substances: opioids and tranquilizers [10,11]. According to estimates, 14% of doctors become dependent on drug or alcohol during their professional life, and the highest incidence occurs during the first five years after graduation [12].

Alcohol is the substance most widely used by physicians, and it is responsible for almost half of the cases mentioned. However, attention should be directed to the fact that doctors are more vulnerable to abuse of controlled substance than the population in general. In a study with 904 physicians monitored for drug abuse, more than a half of them were from five specialties: Family Medicine (20%), Internal Medicine (13.1%), Anesthesia (10.9%), Emergency Medicine (7.1%) and Psychiatry (6.9%). The anesthesiologists are more susceptible to abuse of very potent opioids, especially fentanyl and sufentanil [9].

The anesthesiologist

due to the difficulty in identifying cases of substance abuse among anesthesiologists, the true prevalence is unknown [13]. However, it is believed to be at least as prevalent as for the general population [14].

In 1983, Anesthesiology and Anesthesia Nursing residency programs were studied for 10 years, and the prevalence of dependence was 1% [15], a rate similar to another study published that same year [16].

The illicit use of opioids and other drugs by anesthesiologists is three times higher than in other specialties [17].

Despite thorough debate on the subject and the use of preventive actions over the last years, the incidence does not seem to change. In 1997, 133 residency programs were followed. The survey showed a response rate of 93%, and dependence prevalence of 1.6% among residents and of 1% among hired physicians, although 47% of these programs had improved their preventive interventions focusing on substance abuse [18].

The prevalence of anesthetic agent abuse, in particular fentanyl, is thought to be high among Anesthesiology residents. It is estimated at 1.6% [19].

In a study carried out from 1991 to 2001 in the USA, including several residency Anesthesiology programs, with a response rate of 66%, 80% of the programs reported experience with impaired residents and 19% reported at least one fatality [7,20]. Out of the 111 respondent programs, 16% periodically included a screening test for substance abuse during the selection process and 15% required urine testing prior to applying for a medical residency program.

The majority of impaired residents attempted to return to residency after treatment. Only 46% of the impaired residents completed training.

Despite preventive strategies, the mortality rate still causes concern: studies report 10% [21] and 19% rates of fatal cases [7,20].

A study including 304 Anesthesiology departments, carried out in Ireland and in the United Kingdom [22] from 1990 to 1999, revealed cases of substance abuse in 39% of the departments. It also verified that, every month, one anesthesiologist was dismissed for drug dependence. Some studies show similarly high incidences in Australia and New Zealand [23]. Not only physicians are at risk; nurse anesthetists are as well [24].

Types of psychoactive controlled substances

The drug most used by anesthetists is alcohol (50%), followed by opioids (33%), stimulants (8%) or other substances (9%) [25].

Among the anesthetic agents most used by anesthesiologists are the opioids [26], but there has been increased concern with propofol [27] and inhalational anesthetics [28].

Propofol

An American survey conducted via email and telephone calls to the chairs of the Anesthesia Departments to detect the prevalence of propofol abuse in 126 Anesthesiology residency programs revealed that 18% of the programs reported one or more cases of propofol abuse over the last decade [27]. This figure represents a fivefold increase if compared to the previous survey. Among 25 individuals abusing propofol, seven died, which corresponds to a rate of 28%. Taking only the residents into account (n = 16), there were six fatal cases, which increased the mortality rate to 38%.

One of the possible reasons for the use of propofol is related to its great dependence potential. Research has shown that subanesthetic doses are sufficient to increase the dopamine concentration in the *nucleus accumbens*, which is a region that is strictly associated to the brain reward system [29]. Thus, propofol would produce a great reinforcement potential, which would explain its frequent use [30,31].

Inhalation agents

In a survey that included 106 Anesthesiology departments, Wilson et al. [28] noticed that 23 of the departments had one or more individuals abusing inhalation anesthetics, totalling 31 addicts.

Opioids

Anesthesiologists tend to abuse more opioids, such as fentanyl and sufentanil [32]. This abuse is usually associated with other psychiatric comorbidities. A review performed in 1991