

Chemical dependency: An occupational hazard in the field of anaesthesia

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Abstract

The medical personnel are vulnerable to substance abuse and dependence due to ready access to substance of abuse. Addiction is considered as an occupational hazard for those involved in the practice of anaesthesia for the same reason.

in Pakistan, but no data is available to determine the prevalence among medical or anaesthesia personnel. In order to handle the rising trend of chemical abuse, we need to have more surveys and studies on this subject, written policy and educational programme in postgraduate training with proper control and frequent checking of narcotic dispensing. Reporting of drug abuse and rehabilitation of affected doctors are areas which need to be worked upon.

Introduction

Chemical dependency in medical personnel is a common problem worldwide. Recognition of this problem is not new, its history dates back to 1892, when it was first mentioned by Sir William Osler¹ in the first edition of "The Principles and Practice of Medicine". Two years later, Mattison² in his article stated that: "More cases of morphinism are met among medical men than in all professions combined". Since that time, substantial advances have occurred in the understanding of this problem with advancement in technology and therapeutic approaches to fight this disease but unfortunately outcomes have not appreciably changed.³

Addiction is considered as an occupational hazard in the practice of anaesthesia. Anaesthesiologist (as well as any physician) may suffer from addiction to any type of substances, though addiction to opioids remains the most common, with fentanyl and sufentanil topping the list.⁴ Other agents such as propofol, ketamine, sodium thiopental, lidocaine, nitrous oxide and the potent volatile anaesthetics, are less frequently abused.⁵

Heavy social drinking, which may not fit the criteria for dependence is also on the increase. Alcoholism and other forms of impairment impact anaesthesiologists at rates similar to those in other professions.³ The aim of this review is to reflect upon the issue of chemical dependency as an occupational hazard in the field of anaesthesia and what risk it can pose for patients, its prevalence in our society, clinical manifestation in physicians, availability of treatment facilities and helping resources, prospects of re-entry into anaesthesia and lastly

Substance abuse is defined as a psychosocial biogenetic disease, which results from dynamic interplay between a susceptible host and favourable environment. According to the 5th and the last National Survey on Drug Abuse (NSDA) in 1993 by Pakistan Narcotic Control, there are nearly three million drug dependants

recommendations pertaining to our part of the world.

Is chemical dependency an occupational hazard in the field of anaesthesia?

Addiction has remained an issue in the practice of anaesthesiology. A survey done in the United States of America between 1991 and 2001 showed 80% of American anaesthesiology residency programmes to have experience with impaired residents and 19% reported at least one pretreatment fatality.⁶

An extensive survey⁷ was conducted by Ward et al on 247 American anaesthesia training programme participants and 64% of the respondents identified at least one of their residents as an abuser of drugs.

What accounts for this disproportional high incidence of substances abuse among anaesthesiologist?

To answer this question we have to view substance dependence as a psychosocial biogenetic disease, which results from dynamic interplay between a susceptible host and favourable environment. What constitutes an instigating exposure to a drug in one person may have absolutely no effect on another and there is no prediction tool to identify the susceptible individual until he or she gets the disease.

Three major antecedents linked to the development of chemical dependency in an individual are: genetic susceptibility, psychiatric co-morbid conditions and exposure related causes.³

There are a number of studies supporting the genetic theory.^{8,9} According to these studies, susceptible individuals having genetic predisposition exhibit preexisting co morbid traits such as novelty seeking and antisocial behaviour and also plays a role in the transition from substance use to dependence and from chronic use to addiction.¹⁰

There has been an association between chemical dependency and other psychopathology. In 1991, review of the data found personality disorders in 57 of 100 substance

abusers.¹¹

Exposure related theory states that exposure sensitizes the reward pathway in the brain to substance use.¹²

Anaesthesiologists are more prone to addiction due to proximity of large quantities of highly addictive drugs, relative ease of diverting these agents for personal use, orientation towards self medication, lack of external recognition, the high stress environment in which anaesthesiologists work, and exposure in the workplace that sensitizes the reward pathways in the brain and thus promotes substance abuse.¹²

Prevalence:

Limited data is available to determine the prevalence of chemical abuse by anaesthesia personnel. Records of disciplinary actions, mortality statistics and registries provide some information. In 2002, Booth et al¹³ found drug abuse among anaesthesia personnel to be 1.0% among faculty members and 1.6% among residents. In Pakistan limited data is available to determine the current prevalence of drug abuse. According to the 5th and the last National Survey on Drug Abuse (NSDA) in 1993 by Pakistan Narcotic Control, there are nearly three million drug dependants in Pakistan.¹⁴ This represents nearly a threefold increase in the total number of dependents and 30 fold increase in the number of heroin dependents when compared to the findings in the 1st NSDA report of 1982.

I was not able to find any record of prevalence of substance abuse among medical personnel in Pakistan. A study conducted among the undergraduate medical students in two medical colleges of Calcutta, India (with whom we share some cultural similarities), indicated that during 1993, the point prevalence values of total and current drug abuser were 48.9% and 27.9% respectively among the respondent student population.¹⁵ Turkey, a predominantly Muslim country (as Pakistan) has reported point prevalence figures of only 4% for the use of illicit drugs among medical students. However, 46.1% of the students consumed alcohol, among which 7.4% had risky alcohol use.¹⁶

Clinical Manifestation:

Doctors are very adept at hiding drug and alcohol addiction, therefore when it becomes obvious to people around them, it is usually at a very advanced stage. The doctor's attempt to conceal addiction is not always dishonest. Commonly, there is a psychological defense mechanism called 'denial' at play. This leads the doctor to believe genuinely that he or she does not have a problem. Denial is not limited to the addicted doctors but coworkers, friend, relatives and associates will often make excuses for or prefer not to deal with impaired physician.¹⁷ The reasons for this is complex but includes misplaced loyalty, fear of consequences and inadequate knowledge about addiction and its treatment. Some of the changes typically observed in the

affected anaesthesiologist include withdrawal from family and friends, mood swings with period of depression and euphoria, spending more times in hospital (close to substance of abuse) and signing out increase amount of narcotics.

Treatment:

An addiction psychiatrist should direct diagnosis and treatment .Currently the American board of Psychiatry and Neurology recognizes addiction psychiatry as a subspecialty of psychiatry that focuses on evaluation and treatment of individuals with alcohol, drug or other substance related disorders and individuals with dual diagnosis of substance related and other psychiatric disorders.

Most treatment centers are based on the Minnesota treatment model¹⁸ which involves detoxification, monitored abstinence, intensive education, exposure to self groups, and psychotherapy. Because of the need to assure the safety of patients, management of the addicted doctors must not be focused solely on the personal needs of the doctors. It requires abstinence and a total change in the doctor's attitudes and behaviour to enable him or her to enjoy life in a sober state.

Helping Resource:

In the western world various support systems are available like sick doctors trust (SDT), the British Doctors and Dentist Group (BDDG) and Impaired Professional Committee.

The Pakistan Medical and Dental Council's code of ethics in their section 11.1.12 states "Any registered medical /dental practitioner found guilty of violation of the Dangerous Drug Act, or who becomes addicted to a drug, or is convicted of driving under the influence of alcohol or any other drug is liable to be suspended" or have his/her names removed from the register". Unfortunately besides this code of ethics, we do not have any policy or plan of treatment in Pakistan. There is no statistics or any provision of monitoring and rehabilitation of impaired doctor.

What is the risk to the patient treated by a narcotic addicted physician?

Anaesthetists sober decision making skills are essential for the safety of the patients. Patients will be at risk when clinical decisions are left at the hands of physicians who are directly under the influence of a chemical or who are preoccupied by thoughts about their next opportunity to get the substance of abuse. Bryson and Silverstein³ state one method used by addicted individuals for diverting substance for personal use is to substitute beta adrenergic blocking drugs for narcotics .Who among us would like to awaken from an anaesthetic with nice slow heart rate but inadequate analgesia?

Re-entry to the Field of Anaesthesia?

The question posed to those who must deal with identified drug abusers is what to do with addict anaesthetists once they emerge from their treatment programme. In United States for past many years, there seems to have been a consensus that narcotic dependent anaesthesia personnel in the recovery phase should be allowed to return to the practice of operating room anaesthesia in a closely monitored setting.¹⁹ Dr. Seppala in his editorial¹⁹ recommends another approach. He is of the opinion that an individual who has become addicted to or is abusing self administered anaesthetic drugs and supplements (e.g. opioids, benzodiazepines, inhalation anaesthetics) should not be allowed to return to anaesthesia workplace. The top reasons being high risk of relapse and increase death rate with relapse.

Gastfriend²⁰ dubs addictive disease as "a brain disease that subverts self preservation". Returning to the operation room (or other anaesthesia practice settings) places the recovering anaesthetist at high risk for relapse. It is difficult to exactly quantify the relapse rate, as too many have been lost to follow up to draw any conclusions. Study by Menk et al²¹ in 1990 showed that nearly two thirds of parenteral opioids addicted anaesthesiology residents who returned to their training programme relapsed and in 16% of these cases death was the initial clinical presentation of relapse. Two more studies on narcotic addiction among anaesthesia residents have shown the death rate with relapse ranging from 9% to 31%.^{22,23}

It is high time that we should re-visit this area. Instead of being politically correct we should seriously consider the danger of putting the same person in an environment of operating room where there is again a temptation for drug abuse.

Recommendations:

1. Education at the medical school level: Students need to be educated at the medical school level to increase the awareness of effects and side effects of drug abuse to change their attitudes towards this hazard. One survey conducted to assess the perception of medical students from one medical college in Karachi²⁴ regarding drugs and alcohol suggests that medical students have limited knowledge regarding this issue and recommended that educating students about the adverse effects is more likely to have a positive impact. Counseling facilities and healthier avenues for recreation are also required.

2. Anaesthesia residency programme should have a written policy and educational programme regarding substance abuse.

3. Pre-employment and / or random drug screening should be done.

4. Strict control system and frequent checking of narcotic

dispensing.

5. Random checking of used narcotic syringes.

6. In Pakistan we need to develop a system of reporting as we do not have any statistics regarding drug abuse in doctors.

7. We need to have surveys and studies on this subject.

8. Treatment and support system for addicted doctor needs to be developed.

9. Rehabilitation programmes for addicted doctors to help them cope up with the stressful situation.

Conclusion

Substance abuse is a common problem worldwide. Pakistan, a South Asian developing country with a population of 160 million is no exception. Cultivation of poppy has been carried out in the northern part of Pakistan for a long time but unfortunately we are unaware of the actual gravity of the situation, as we do not have any statistics regarding drug abuse in general population. In 1993, when the last survey was conducted by Pakistan National Control Board (PNBC), we do not have any recent survey. PNBC was disbanded in the mid 90's. Presently an Anti Narcotic Force operates in order to serve as narcotic control and enforcement agency with no mandate to carry out steps toward drug abuse prevention or long term rehabilitation.

The medical personnel are vulnerable to substance abuse and dependence due to ready access to the substances of abuse. Addiction is considered as an occupational hazard for those involved in the practice of anaesthesia for the same reason. We do not have any plan for the treatment and rehabilitation of the affected doctors. Anaesthetists are like pilots where sober decisions making skills are essential at all times and where impaired functions put patients at risk.

The treatment and management of addicted doctors require more than harm reduction or damage limitation, it requires a whole change of our perception, attitude and system.

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