

REVIEW

Exploration and Discussion on Drug Management in the Operating Room

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ABSTRACT

Operating room drug management work directly related to the safety of medication and the scientific nature of medication, the most important content of operating room drug management is to ensure the rational and safe use of drugs, to avoid drug abuse and misuse. This paper mainly explores the problems existing in the current operating room drug management process, points out the specific drug management model, and hopes to give full play to the role of drug management to ensure that drugs can be applied scientifically.

1. Introduction

The work of the hospital is relatively complicated, and there are many kinds of drugs to be used in the operation process, especially narcotic drugs. In order to ensure the smooth and safe completion of anesthesia and surgery, it is necessary to strengthen the management of the operating room drugs, identify the problems that may exist in the drug management process, and take targeted measures to solve them, which enables the drug management to be process-oriented, institutionalized and standardized.

2. Main Types of Drugs in the Operating Room

2.1 Narcotic Drugs

Narcotic drugs are an important part of operating room

drugs. Commonly used operating room anesthetics include muscle relaxants, general anesthetics, local anesthetics, partial anesthetic antagonists, and analgesics, which mainly includes propofol, succinylcholine chloride, lidocaine hydrochloride, neostigmine mesylate, flumazenil and other drugs.^[1]

2.2 Psychotropic Drugs and Toxic & Narcotic Drugs

Psychotropic drugs and toxic & narcotic drugs are special drugs in surgical drugs, which regulate the systematic processes and systems for special drug management, and are also an important part of drug management in medical institutions. As an important use place for psychotropic drugs and toxic & narcotic drugs, it is necessary to pay attention to the classification methods and management

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methods of psychotropic drugs and narcotics when conducting drug management in the operating room. At present, the common toxic & narcotic drugs in the operating room mainly include the pre-anesthetic induction drugs Mida Tenglung analgesic drugs, remifentanyl and dizocine, sedative drugs, and small surgery anesthetics and vaso-pressors.^[2]

2.3 Rescue Drugs and Other Drugs Commonly Used in the Operating Room

Common rescue drugs and commonly used drugs in the operating room include adrenaline, atropine, dopamine, dexamethasone, furosemide, and tonofolamine.^[3]

3. Main Drug Management Requirements in the Operating Room

The operating room is responsible for the treatment of departmental surgery and intraoperative rescue. Unlike other specialist wards, the operating room drugs have certain particularity. The consumption of drugs is relatively large, and the types are relatively complicated, mainly based on narcotic drugs and rescue drugs. During the operation, the drug management and placement are required to meet the safety and convenience characteristics. The operating room is usually a fully enclosed modern operating room. In order to facilitate the timely use of drugs during the operation, it is necessary to rationally design and install the drugs according to the layout of the operating room, and improve the quality of drug use and the efficiency of drug use. Because hospital surgery is relatively complicated, the types are quite diverse, therefore, it is often necessary to use a variety of rescue drugs, design drugs in the vicinity of the operating room, to ensure that the drug can be accurate and rapid, to win sufficient time for the rescue of the disease. The drugs commonly used in the course of surgery mainly include balance solution, Ring-er's solution, glucose solution, sodium chloride solution, glucose, mannitol and low molecular weight dextran. Anesthesiology in the anesthesia department set up a number of anesthesia adjuvant drugs including atropine, adrenaline, ephedrine, dexamethasone and other drugs. At the same time, it is necessary to set up an ambulance in the anesthesia recovery room. The ambulance should contain all kinds of rescue items and rescue medications to avoid accidents.^[4]

The operating room needs to be set up in a general operating room, a specialist operating room, and an ambulance according to its own working characteristics. In general, the operating room needs to be equipped with medicine car, medicine cabinet and commonly used drugs.

After the surgery, the roving nurse will hand over all the prescriptions to the foreman nurses, and the foreman nurses will timely supplement and record the drugs, which will facilitate the drug management and post-operative medication. In order to facilitate rapid drug use during the operation, it is necessary to properly set up the drug car and the medicine cabinet to ambulance, and position it and lock it reasonably, improve the success rate of rescue and the efficiency of drug use, and save time in medicine. The emergency vehicle needs to be prepared according to the relevant standards of the hospital, and the professional medical staff is responsible for establishing the drug specification card for the rescue drug, checking the use record of the rescue drug and supplementing the drug in time. After the use of the drug in the ambulance, it is necessary to sign the licensee to observe the period of use of the drug in the drug vehicle, and to change the drug three months before the drug expires. The ambulance is divided into four layers, each of which is equipped with various injections, various first-aid injections, various rescue kits, and rescue drugs.^[5]

4. Existing Problems in the Management Process of Operating Room Drugs

4.1 Strong Randomness of Drug Storage

Judging from the current status of drug management in the operating room, there is a widespread randomness of drug storage, and there is no problem of sample placement in strict accordance with relevant regulations. Many hospitals do not have professional pharmacists in the operating room for drug management. Drug management and inventory are usually carried out by medical staff and nurses. Many high-risk drugs such as insulin, digitalis and muscle relaxants are mixed with common drugs, which may cause dangerous use of drugs. Secondly, there are still phenomena such as unclear validity period of the drug, unclear batch number and label disagreement in the drug management, which increases the difficulty of drug check-up by medical personnel, and is likely to cause medical troubles in which the drug is used in disorder. For some drugs that need to be preserved under special conditions such as temperature and humidity, they are not preserved according to relevant regulations, which may cause drug failure or even adverse drug reactions. For example, oxytocin and heparin sodium used in clinical practice require cryopreservation, but from the perspective of actual drug management, drugs are not stored in strict accordance with relevant regulations. Adrenalin drugs do not have light-shielding measures, which will inevitably lead to a decrease in the therapeutic effect of the drug, a decrease in

activity, and even cause drug failure and serious toxic side effects of the drug, which may threaten the life and health of the patient.^[6]

4.2 Unplanned Drug Requisition in the Operating Room

Under normal circumstances, the hospital will set strict standards for the management and control of drugs in the operating room, however, many hospitals do not follow the actual situation of operating room surgery and the needs of drug management during the process of drug management in the operating room, only the technical management of psychotropic drugs and narcotic drugs is not restricted and regulated according to the dosage of the drugs required by the daily patients and the specifications of the drugs, but simply settles with the pharmacy according to the amount of the amount, however, there are large price differences between different specifications of different drugs, which will cause repeated redundant drugs to be returned to the pharmacy, which will not only cause economic losses for patients, but also lead to repeated balance work, which will increase the workload of the pharmacy, thereby affecting the efficiency of the hospital.^[7]

4.3 Special Drug Abuse

The operating room has a relatively large amount of special drugs, and it is usually impossible to determine the amount of special drugs during the operation before surgery. Therefore, many hospitals do not impose strict regulations and restrictions on the collection of special drugs. In the process of actual surgery, due to imperfect prescription management, unscientific and special drugs not registered in time, it is easy to cause the loss of special drugs and drug abuse problems, affecting the smooth and safe development of surgical activities.

4.4 Other Common Problems during Surgery

The drugs in the operating room mainly include three types of drugs, and the three types of drugs can be divided into a plurality of relatively small types. The same drug can be divided into a variety of different specifications, requiring pharmacy personnel and medical personnel who apply drugs during the surgery to conduct systematic scientific research on the drug, to clarify the main role played by the drug and the specific traits of the drug. However, the staff of medical staff and pharmacies often lack scientific and reliable communication and communication, and cannot grasp the real-time supply information of drugs, which may cause problems of drug shortage or drug breakage, and cause drug use danger. In many hospitals,

there are problems in the process of rescuing the vehicle during the operation of the rescue vehicle. Sometimes the pharmacy setting is far away from the operating room setting, and the medicine cannot be replenished in time and quickly equipped, which may cause disturbance and damage of the surgical process.

5. Countermeasures for Drug Management in the Operating Room

5.1 Develop an Effective Drug Management System

Formulating a scientific and sound drug management system is a prerequisite for ensuring the smooth and scientific development of drug management. Generally speaking, the amount of drugs used should be determined according to the number of operations and the size of the surgery. Therefore, it is necessary to count the doses and types of drugs used in the operation during the daily operation, fix the bases of some commonly used rescue drugs and narcotic drugs, prevent the abuse of drugs, and be responsible for the use of drugs by special personnel to ensure that the supply of medicines is timely and avoid the loss of medicines. Secondly, it is also necessary to check the drugs regularly, clean the small pharmacies in a timely manner, periodically check the drugs, and do a good job in the drug budget, so that the drug can be collected in a uniform and orderly manner, and the drug's shelf life is checked monthly, and the drug that is about to deteriorate or expire is replaced. Drug administrators need to take up their own responsibilities and strictly follow the relevant standards and procedures to complete the management and use of drugs. Special drugs such as psychotropic drugs, highly toxic drugs and narcotic drugs are required to be kept by special counters, especially for highly toxic drugs, it needs to be locked and managed. In addition, there is also a need to develop an effective check system. With the continuous development of the modern medical system and the gradual improvement of the medical level, the drugs used in the surgical process are becoming more and more complex and advanced, in order to ensure the safety of medication and prevent allergic reactions, it is necessary to carefully check the antibiotics used to prevent wound infection during the operation, check the dosage, name and results of the skin test, and do a good job of shifting between nurses. Anesthesiologists and roving nurses need to communicate and communicate to ensure that the drug is correct before it can be applied to the patient. At the same time, it is necessary to do a good job of sorting and placing medicines. The types of medicines used in the operation process and the reaction of medicines are com-

plicated. In order to facilitate the timely use of medicines and avoid the occurrence of drug errors, samples need to be classified. At present, the medicines in the operating room are mainly placed in five categories, including narcotic drugs, internal medicines, topical medicines, toxic medicines and biological preparations, it is necessary to separately place and mark them, strictly distinguish high-risk drugs from other drugs, cryopreservation of biological preparations, and protect certain special drugs such as adrenaline from light.

5.2 Strengthen the Study and Training of Operating Room Medical Staff on Drug-Related Knowledge

With the continuous development of modern medical technology and the advancement of medical science, the variety of various drugs has increased, which has also brought great pressure on the work of medical staff in the operating room. In order to strengthen the understanding of surgical medications by medical staff in the operating room and reduce the occurrence of erroneous medication, it is necessary to strengthen the training of the medical knowledge of the operating staff in the operating room, which allows the medical staff in the operating room to identify the usual doses, pharmacological effects, adverse reactions, routes of administration, and contraindications for drug formulation of various drugs. Learn about pharmacological knowledge at regular intervals every month. After the periodic cleaning, the spare time is used to carry out the rescue and coordination training work and the rapid selection of medicines for medical staff is practiced to avoid the panic phenomenon in the face of the rescue problem and the time for the rescue due to the failure.

5.3 Strengthen the Process of Drug Operation

After formulating an effective drug management system, it is necessary to strengthen the allocation of drug storage personnel to ensure the normal operation of drugs and reduce the loss of drugs. It is required that during the operation, the anesthesiologist and the roving nurse work together to register the medication, and after the surgery is finished, the type of medication, the dose of the medication, and the medication are input into the computer system. The daily nurse on duty receives the relevant drugs from the pharmacy according to the computer records. After checking the correct drugs, the drugs are sorted into the medicine cabinet and checked against the base of the medicine in the medicine cabinet. Secondly, the relevant medical personnel of the anesthesiology department need to lock the special counters, keep the prescription drugs

for anesthesia, and carry out statistics and input according to the relevant procedures after use. The nurses on duty receive the anesthesia prescription according to the computer records, and hand it to the anesthesiologist on duty to lock and keep. When receiving intravenous fluids and consumable drugs, it is necessary to check the dosage, batch number, quantity and name of the drug in time, and sign and review it with the issuer after checking the error, to avoid the phenomenon of drug mis-distribution and omission, and to ensure that the operating room is fully equipped.

5.4 Improve Drug Management Methods

The management of the operating room, as well as the collection and distribution, are the responsibility of the surgical pharmacy. Usually, except for the drugs that are commonly used during part of the surgery and during the rescue process, the drugs are distributed according to the number of operations. It is necessary to properly manage and distribute narcotic drugs, prepare a special anesthesia box for each anesthesiologist, determine the daily use of the medicine, and get the anesthetic medicine to go to work. After the shift, the pharmacy is responsible for recovering the anesthetic drugs. Do a good job in the standardization and process management of drugs, and do a good job of recording, so that the use and collection of drugs can be ruled. For the management of the drug application during the operation, it is necessary for the medical staff to send the information about the drug used to the drug delivery room one day in advance. The pharmacy should first complete the surgical drugs according to the doctor's advice, and send the drugs to the operating room on the day of surgery. The nurses in the operating room are responsible for receiving these drugs and checking the drugs. After the operation, the pharmacy is responsible for recovering the remaining medicines. For some special operations, a special medical box is needed to facilitate the use of the shoelaces and emergency use. At the same time, it is necessary to regularly check the use of developing drugs and do a good job in drug management and supplementation.

6. Conclusion

In summary, the operation of the drug management in the operating room is directly related to the safety and reliability of the operation. Judging from the current situation of drug management in the operating room, there are various problems such as unclear management processes, unclear management responsibilities, and abuse of special drugs, which seriously affect the safety and scientificity of

drug use. Therefore, it is necessary to strengthen research on drug management in operating rooms, clarify the methods of scientific drug use, and set up special personnel to carry out drug management in the operating room, improve the concept of drug management, ensure the normal operation of surgical drugs, and improve the working level of the overall operating room.

References

- [1] Xiaodan Chen, Lan Yu, Haibi Lu. Application of drug warning label in drug management in operating room[J]. *Journal of Traditional Chinese Medicine Management*, 2019, 27(02):94-95. (in Chinese)
- [2] Beibei Xia, Qile Ye, Axi Shao, et al. Application of internet of things technology in hospital operating room management[J]. *China Modern Doctor*, 2019, 57(02): 140-143. (in Chinese)
- [3] Lujie Yu. APP intelligent quality management system to improve the quality of operating room care[J]. *Nursing of Integrated Traditional Chinese and Western Medicine (in Chinese and English)*, 2019, 5(03):215-218.
- [4] Xirong Zhan. Application of 6s management method in nursing management of operating room[J]. *Today Nurse (First Issue)*, 2018(7). (in Chinese)
- [5] Fengju Cheng, Zhihu Wang, Fengjiao Cheng, et al. The value of tumor markers combined with cytokeratin 18, 19 in the diagnosis of malignant tumors[J]. *Chinese Journal of Primary Medicine and Pharmacy*, 2018, 25(6):763-766. (in Chinese)
- [6] Enxia Chen. Study on safety management of drugs in operating room[J]. *Journal of North Pharmacy*, 2017, 14(4):174-175. (in Chinese)
- [7] Weiqiong Xie, Zhonghua He, Qingwen Chen, et al. Application of 5s management method in standby drug management in operating room[J]. *Today Nurse: Academic Edition*, 2017(7):182-183. (in Chinese)