

Correlation Analysis of Patients with Adverse Reactions Caused by Postoperative Morphine Analgesia

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Abstract: In the current medical field of clinical surgery, we often have to contact a large number of patients with severe fractures caused by serious accidental injuries. Generally, these trauma patients often need to be treated by repair surgery. Postoperative patients usually have a certain degree of local pain. In order to alleviate the physiological pain of postoperative patients, And can prevent the braking caused by the aggravation of local pain of the injured patients. The use of analgesic pump for postoperative analgesia has become a common method after surgery and has been widely used in clinic. Good postoperative analgesia can inhibit the body's stress response and is conducive to restoring the coordination and stability of local breathing and circulation of the patients after operation, Reduce the local pain symptoms of some patients and effectively reduce their postoperative related complications, and indirectly promote the recovery of patients with pain. For the application of analgesic pump for pain relief, there are often a variety of auxiliary ways and preparation methods of analgesic drugs such as arteriovenous and epidural circulation, which should be selected and configured according to the physical conditions and medication conditions of patients with pain, such as ns100ml Morphine 5mg, bupivacaine 75mg, etc., of which morphine is often used as a common drug component for pain relief, but some special patients often have a series of dependent reactions after using morphine for pain relief. In view of this situation, combined with the physical conditions and adverse reactions of some special patients, this paper analyzes the possible adverse effects on patients with special constitution when using morphine for pain relief after clinical operation and relevant research.

Keywords: Special Patients; Surgery; Analgesic Pump; Morphine; Adverse Reactions

1. Clinical cases

A fracture patient, male, aged 47 years old, suffered from an accidental fall due to long-time work at height, resulting in a comminuted fracture of the patient's left foot. After 120 emergency treatment, he was transported to the hospital. The examination showed that the arch of the foot collapsed, the calcaneal bone was comminuted fracture, and the subtalar joint was damaged. He needed to undergo open reduction and plate internal fixation of the calcaneus. After surgery, the vital signs were stable and the mental state was good. Sbp130mmhg / dbp80mmhg, T37.1 °C, R16 / min, SaO₂ ↓, about 6h after operation, the effect of anesthetic gradually disappears and the pain begins to intensify. Connect the clinical postoperative analgesia pump to relieve the pain. 50ml of anesthetic is built in the pump, 1mg of fentanyl + 9ml of 0.75% bupivacaine + 36ml of 0.9% NaCl injection. The reference value of pump setting: loading dose: 4 ~ 6ml; Single dose (pcablous dose) 1ml.

2. Clinical response

After using the analgesic pump for analgesia for a period of time, the patient appears sweating, tense expression, unbearable pain and other manifestations, followed by a series of symptoms such as unconsciousness and shock. After emergency rescue, the patient has adverse reactions such as unbearable pain again about 5 ~ 10 minutes later. Consider whether the patient has allergic reaction to the drug components in the analgesic pump, According to the doctor's advice, stop the analgesic pump and inject morphine intravenously to relieve the pain. The patient's condition was relieved. The next day, after the efficacy was gradually eliminated, the patient felt pain again and asked the medical staff to continue to inject

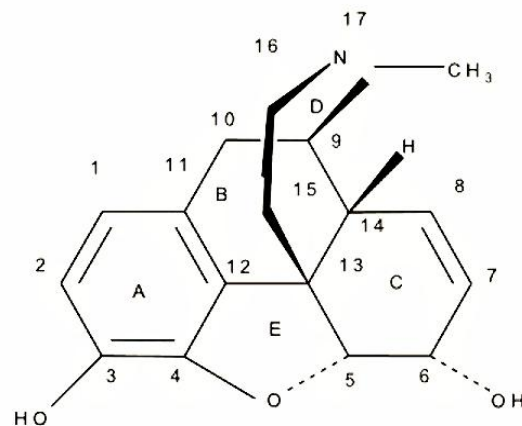
analgesic drugs. In order to achieve the maximum analgesic effect in the fastest time, the patient took the initiative to request morphine injection again for analgesia.

3. Clinical analysis

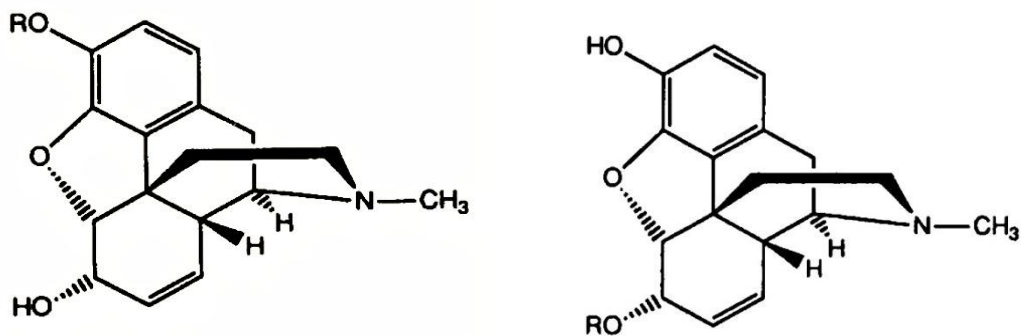
When the patient is in pain, morphine is used to relieve pain. When morphine is administered by subcutaneous injection, it can be absorbed by 60% after 30 minutes, and the absorption is rapid. When the drug effect disappears, the patient is in pain again and asks to use morphine for analgesia. As a medical staff, the injection of morphine drugs should be cautious, considering that morphine has certain addiction, Whether multiple injections will have side effects on patients to a certain extent. For example, patients may start to have a certain physiological dependence on morphine after a period of time. In addition, morphine can also produce respiratory depression, which is mainly manifested in end expiratory $Paco \uparrow$, $Sao \downarrow$, resting minute ventilation \downarrow , respiratory center CO_2 response threshold \uparrow . Therefore, in clinical practice, for patients with special circumstances, morphine should be used with caution for analgesia, which has certain adverse reactions. Its toxic mechanism is because morphine is used as opioid receptor in different brain regions, The activation of the second messenger system and the changes of gene transcription and translation will lead to the changes of Da , opioid peptide and GABA neural pathways in the brain, resulting in the compensatory adaptation caused by the long-term activation of opioid receptors; In addition, it should also be used with caution for special groups such as elderly children, patients with arrhythmias, patients with no recovery of intestinal peristalsis after gastrointestinal surgery, patients with convulsions or a history of convulsions, and patients with liver and kidney dysfunction.

4. Chemical structure analysis of morphine

Natural morphine has left-handed optical properties, and left-handed morphine ((-) - morphine) is composed of five components. A rigid structure made of fused rings. A, B and C rings form a partially hydrogenated acyclic ring, and C and D rings form a partially hydrogenated isoquinoline ring. There are five chiral centers in the molecule: 5R, 6S, 9R, 13s and 14R. B / C ring is cis, C / D ring is trans, C / E ring is cis, ring D is chair conformation, ring C is half ship conformation, and ring a is connected to position 4 of ring D (piperidine ring) by vertical bond. In the structure of morphine, there are phenolic hydroxyl groups at position 3. Phenolic hydroxyl groups are weakly acidic in nature and easy to be oxidized. Etherification of phenolic hydroxyl groups at position 3 often leads to the reduction of analgesic activity. They are mainly used for moderate pain relief or antitussive in medical clinic. In addition, morphine has 6-hydroxy alcohol, which is neutral and easy to dehydrate; Ether bridge bond, neutral, unstable to acid and easy to lose water; Morphine n- CH_3 , which is alkaline, loses its activity after removal and can be used for salt formation; 7,8-double bond, which can be used to reduce to saturated ring. (refer to relevant drawings: Refer to figure 1, Refer to figure 2)



【Refer to figure 1】



【Refer to figure 2】

5. Other adverse reactions of morphine:

The adverse reactions of morphine are relatively extensive and in various forms, not only in physiology, but also in spirit and psychology. In addition to certain addiction and dependence on the human body, they also include constriction of pupils, inhibition of breathing, drowsiness, emotional disorder, difficulty in urination, skin pruritus and other adverse reactions, Morphine can constrict the smooth muscle of digestive tract and dilate the surrounding blood vessels. It will lead to constipation and lower blood pressure (such as postural hypotension). A few patients will have laryngeal edema, bronchospasm and so on.

6. Summary

Morphine belongs to opioid narcotic drugs, and its acetate, also known as heroin, is an important part of drugs. It can make people feel happy to some extent, but long-term use will have serious adverse effects on the functions of human central nervous system, cerebral cortex and immune system, resulting in the decline of human thinking ability, attention, memory and other functions, At the same time, accompanied by pathological changes or organ dysfunction in other tissues of the body, the human body will suffer from slow response, dyskinesia, depression, disorientation and sexual dysfunction. If morphine is used for a long time and in a large dose, it will also lead to hallucinations, mental disorders, and even convulsions Shock or even death. Once addicted to morphine for a long time, it will produce varying degrees of dependence and harm to physiology, psychology and spirit, resulting in serious adverse consequences and great harm to themselves, families and even the whole society. Therefore, in clinical practice, we should be cautious about the use of morphine drugs and strictly clarify the specific scope of morphine use Specific requirements and relevant systems to ensure the standardization of morphine use, minimize the adverse harm and negative impact of morphine on patients and others, and create a good social atmosphere.

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