THE INTRAVENOUS USE OF DIHYDROMORPHINONE HYDROCHLORIDE (DILAUDID) FOR ANALGESIA

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OCCASIONALLY it seems to be necessary to call attention to the fact that potent analgesic drugs can be administered by methods other than the ordinary or routine subcutaneous method. The use of morphine sulphate intravenously has been reported on previously by the author (1) and others. Since some believe dilaudid to be a more potent analgesic agent than morphine, and to cause fewer side reactions and less subjective depression, it seemed worth while to try it clinically as an intravenous analgesic agent. This has been done over a period of two years in 150 cases.

Seevers and Pfeiffer (2), studying the normal human subject, found that the peak of analgesia with intravenous dilaudid is reached in twenty minutes, as compared to ninety minutes for subcutaneous administration. Clinically, it has been my experience that the relief of pain is much quicker. The vast majority of patients state that they have noticed considerable relief in two to three minutes and others have had complete relief in three to four minutes. However, the peak of analgesia may still occur a little later. Seevers and Pfeiffer also found that dilaudid seemed to be relatively weak when administered intravenously in dosage of 1.0 mg. (1/64 gr.) but that relatively small increases in dosage effect a greater response in terms of rise above the control level. For the control of pain a dose of 1.0 mg. is usually not sufficient. The 2.0 mg. (1/32 gr.) dose gives much better analgesia, as the above work would indicate. The duration of action is definitely less with intravenous administration, probably about one-half. The degree of narcosis with intravenous dilaudid is much less than when morphine is given intravenously. The narcosis comes on more quickly than analgesia and does not correspond to the peak of analgesia.

For intravenous injection the 1 cc. ampule containing 2.0 mg. (1/32 gr.) has been found to be very satisfactory. It is not necessary to dilute the drug further, as is best to do with morphine. The drug is aspirated into a 2 cc. syringe and a 20 or 22 gage intravenous needle is attached. After venipuncture, a small dose, ¼ to ½ cc. is administered first and thirty to forty-five seconds allowed to elapse. Any untoward reaction will probably be noticed in that time if it is going to occur. The rest of the drug can then be given slowly.

The intravenous method of administration of this drug has been used most favorably in patients with acute pain and, also, as additional

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premedication before regional anesthesia. It has given satisfactory results in relieving pain in patients who have had ureteral catheterization under local anesthesia with the catheter kept in place. The relief has been so rapid that it seemed as if there was an additional action besides analgesia, possibly relaxation of the ureter (3). Acute pain such as that due to renal colic, angina pectoris and trauma may be more rapidly alleviated by intravenous medication, which may be followed after a period of time by subcutaneous medication to give a prolonged effect. Intravenous dilaudid serves as a good analgesic agent prior to the administration of regional or local anesthesia. If given about five or ten minutes before the block is started the analgesia will be at its height of action during the administration of the anesthetic. Intravenous analgesia can also be well used in patients with acute pain after the physical examination has been made and before the history is taken. This method does not disturb the signs of the disease process and often enables the physician to get a better history because of more cooperation from the patient after his pain has been relieved.

A considerable slowing of the pulse has been noticed in many patients. This may be the result of the decrease in pain as well as some vagal stimulation. The incidence of nausea and vomiting has been very low and there have been no untoward reactions.

Summary.—Dihydromorphinone hydrochloride (dilaudid) when administered intravenously in moderate doses gives quick and safe analgesia for acute pain.

REFERENCES

1. Betlach, C. J.: Intravenous Use of Morphine Sulphate for Analgesia, Proc. Staff Meet., Mayo Clin. 12: 733–735 (Nov. 17) 1937.
2. Seevers, M. H., and Pfeiffer, C. C.: A Study of Analgesia, Subjective Depression, and Euphoria Produced by Morphine, Heroine, Dilaudid, and Codeine in Normal Human Subject, J. Pharmacol. & Exper. Therap. 56: 166–187 (Feb.) 1936.
3. Gruber, C. M.: Relative Actions of Dihydro-morphinone Hydrochloride and Morphine Sulphate on Excised Ureter and Bell's Muscle, Proc. Soc. Exper. Biol. & Med. 33: 532–534 (Jan.) 1936.
