Title: COMPOUNDING LOCAL ANESTHETICS AND NARCOTICS FOR EPIDURAL ANALGESIA IN CANCER OUT-PATIENTS

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Introduction. The use of intraspinal opioids for the augmentation of cancer pain control when oral analgesics are no longer effective, is becoming well established, and may well be one of the last rungs of the "analgesic ladder advocated by the World Health Organization (WHO)"[1]. The degree of nociceptive stimulation along with the specific pain source will dictate the degree of pain relief achieved by this technique[1,2]. In general, pain from pathological fractures and nerve-root invasion are the most difficult to treat[3]. In our experience, approximately 15-20% of terminal patients will have pain which becomes uncontrolled by epidural opioids, with and without supplementary systemic narcotics. For these patients the catheter integrity should be first checked with an epidurogram; after which, neurodestructive blocks, neurosurgical procedures, and radiotherapy should be reconsidered. Those patients who remain resistant to therapy were considered for a bupivacaine-narcotic infusion. We will present a series of patients who were converted to an epidural infusion of a bupivacaine-narcotic solution and will discuss dose requirements, monitoring techniques, patient activity, blood level results, and discharge statistics.

Method. Out of 213 patients treated with the permanent silicone-rubber epidural catheter for chronic narcotic administration[3], there were 28 who received a bupivacaine-narcotic epidural infusion. The catheter tip position became especially important when considering a bupivacaine infusion. In each case, the infusion was started with 0.125% bupivacaine containing 1/600,000 epinephrine and narcotic added in a concentration which would deliver at a 6 ml/hr infusion rate, a narcotic dose similar to that delivered during the epidural bolus therapy. Concentrations of bupivacaine were increased or decreased by increments of 0.04% to 0.06% until pain was effectively controlled. Patients were monitored with supine and sitting blood pressures every 4 hours for 24 hours after each bupivacaine concentration change. After hospital discharge, weekly venous blood levels of bupivacaine were obtained.

Results. The 28 patients who received epidural infusions of bupivacaine-narcotic were found to have no difficulty adjusting to the chronic sympathetic blockade. During the first 24 hours, 3 patients (11%) experienced a greater than 20% drop in MAP (postural hypotension), however, there were no MAP postural changes noted in any patients with bupivacaine concentration changes after the initial chronic sympathetic blockade developed. 76% of all patients placed on the bupivacaine-narcotic infusion were discharged home, using a small external ambulatory pump. One patient developed an epidural infection during the infusion, but no other complications were noted over the total of 1128 days of terminal therapy. Therapeutic doses of bupivacaine varied from a mean of 480mg in the 0.25% group, 960mg in the 0.375% group, and 1400mg in the 0.5% group. The highest chronic dose was 1800mg/24 hours for 16 days with no signs of systemic toxicity.

Discussion. The management of terminal cancer pain has made significant strides with the introduction of epidural opioid administration[1]. However, it became apparent that there are a number of patients who continue to suffer from pain unrelieved by the use of epidural narcotics. The addition of chronic epidural blockade to supplement the selective block of epidural narcotics has allowed us to extend our ability to offer pain relief even to the most resistant patients. Chronic doses of bupivacaine were far beyond the recognized toxic limits and were reflected by high venous blood levels, but no toxic signs were seen. The lack of complications and the tolerance of chronic sympathetic blockade has allowed us to extend this service beyond the hospital to the home environment. The support of a home healthcare service to prepare and deliver the medication has allowed a smooth transition to excellent home care. We, therefore, recommend this technique both for hospitalized and home-treatment to control resistant terminal cancer pain.

References.

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