Short report

Epidural morphine analgesia in Guillain Barré syndrome

D GENIS,* C BUSQUETS,† E MANUBENS,† A DÁVALOS,* J BARÓ,† A OTERINO‡

From the Unitat de Neurologia, Servei d'Anestesia,† Servei de Medicina Interna,‡ Hospital de Girona "General Alvarez de Castro", Girona, Spain*

SUMMARY Severe pain is a frequent symptom in the Guillain Barré syndrome and can be intense, long lasting and with no response to the usual analgesics, including parenteral opiates.

Epidural analgesia using morphine chloride in low doses has satisfactorily relieved pain in this disease in nine patients.

Pain associated with the Guillain Barré syndrome has received little attention in the medical literature. Its pathophysiology is poorly understood. Some authors attribute the pain to muscular involvement secondary to neuropathy, others are more in favour of a mixed muscular and neural mechanism.^{1,2}

Many drugs have been used as analgesics in this condition including quinine³ and oral or parenteral opiates,^{1,6} but it has been difficult to achieve rapid and lasting pain control. We have used morphine epidural analgesics (MEA) to treat patients affected by Guillain Barré syndrome with severe pain and who had not responded to oral or parenteral pain therapy, and report in this paper the results obtained in the treatment and evaluation of nine patients.

Methods

Nine patients met the diagnostic criteria for Guillain Barré syndrome established by the Neurological Institute of Neurological and Communicative Disorders and Stroke (NINCDS).⁴ Muscle strength was evaluated according to the Medical Research Council Scale. In all subjects undergoing plasmapheresis the London prednisolone trial scale was applied.^{5,6} Table 1 summarises the clinical findings.

All our patients were suffering from severe pain, making it

impossible for them to sleep, and their condition had not improved with routine analgesics (acetaminophen, aminopyrine, codeine, diclofenac, propoxyphene, buprenorphine, amitryptiline, clonazepam and diazepam).

The following materials were used: a set of peridural anaesthesia Perifix with Tuohy needle providing a catheter and antibacteria filter (Perifix 320 made by B Braun Melsungen AG). All our subjects received morphine chloride as a sole analgesia. To this end a solution of morphine chloride and normal saline was prepared giving a final concentration of 0.4 mg per ml. The dosage given to the patients varied between 1 to 4 mg of morphine every 8, 12, or 24 hours via epidural bolus injection. The frequency and dosage increase depended on the patient demands and comfort (see table 2).

Results

All nine patients were evaluated and 8/9 gave a positive response. Pain ceased completely during the day and allowed all patients to rest and sleep completely during the night.

The effects of the drug took place between 20–40 minutes from the time of administration. Except number 3, patients received morphine q8h, q12h, and q24h schedules. As pain improved the schedule was reduced.

The patients undergoing physiotherapy exercises tolerated manipulation better once the treatment with MEA was initiated. When patients 1, 7 and 9 noticed that MEA was becoming ineffectual, the implantation of the catheter was found to have moved out of the epidural space. Reimplantation and tunnelisation of the catheter solved the problem.

Address for reprint requests: D Genis, Unitat de Neurologia, Servei de Medicina Interna, Hospital de Girona "General Alvarez de Castro", Girona, Spain.

Received 19 September 1988.

Accepted 6 February 1989

Table 1 *Clinical findings*

Number	1	2	3	4	5	6	7	8	9
Age (yr)/Sex	61 / F	61 / F	53 / M	55 / F	22 / M	69 / F	50 / M	16 / F	24 / F
Stage	IV	IV	V	IV	IV	IV	IV	V	IV
Respiratory insufficiency	No	No	Assisted breathing	Yes	Yes	No	Yes	Assisted breathing	No
Site of pain	Lumbar LL	Lumbar LL	Lumbar LL	Lumbar LL	Neck Dorsum UL/LL	UL Lumbar	Lumbar LL	Neck Lumbar LL	UL Lumbar LL
Plasmapheresis	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Last evaluation	1 year	30 days	Dead	45 days	45 days	40 days	60 days	45 days	30 days
Stage	I	II	VI	0	0	IV	II	II	IV

UL, upper limbs; LL, lower limbs.

Side effects of epidural morphine were scarce. Urinary retention occurred in patients 2, 5, 7 and 9. Patient 2 required bladder catheterisation, patient 5 was catheterised throughout the treatment with full recovery afterwards. In patients 7 and 9 the urinary retention was resolved by the administration of 0.4 mg of naloxone. Use of this drug did not impair the analgesic effect of MEA. Patients 3, 6 and 9 suffered generalised pruritus. Patients 6 and 9 had mild nausea and vomiting. All these symptoms disappeared with reduction of the morphine dose. Patient 3 had progression of the disease with respiratory depression that needed assisted breathing. The evaluation of analgesia and his secondary effects in this patient was difficult.

Seven patients underwent plasmapheresis. Although the clinical picture improved in some of them, no patient felt that pain improved with only plasmapheresis. We do not discount the possibility of a reduction in "total time" of pain, but this parameter was not evaluated.

Discussion

Since 1979 MEA has been used for the treatment of pain related to cancer, post-operative pain, pain in labour, etc.^{9 10 11} There are several reports on its results

and complications.^{10 11 12}

Pain in the Guillain Barré syndrome has received little attention in the medical literature. The detailed article by Ropper and Shahn¹ offers a precise analysis of its pathophysiology and three other reports deal with its treatment.^{3 7 8}

During the period 1981–1988 we have seen in our service 26 cases of Guillain Barré syndrome. In our series frequency of significant pain was 61% (16/26). The pain affected most frequently the lumbar region, buttocks, thighs and legs; three patients had pain in the upper limbs, upper dorsum and neck. Pain was characteristically nocturnal being less severe in the morning.

Before using MEA, we had used several analgesic protocols using oral and intravenous combinations without any encouraging results. We evaluated as excellent the responses to MEA treatment in 8 out of 9 patients in this study. Most of the patients could promptly be put on q12h and q24h schedules. Only patient 3 needed increased dosages of morphine chloride. This happened while he was attached to a positive pressure breathing machine. Increased intra-abdominal or intrathoracic pressure, such as occurs in labour (or in assisted breathing as in our case) could explain the decrease in the efficacy of MEA in patients

Table 2 *Treatment with MEA*

Number	1	2	3	4	5	6	7	8	9
Morphine doses	4 mg/12 h	2 mg/12 h	3 mg (5 by day)	2 mg/12 h	2 mg/12 h	1 mg/12 h	2 mg/12 h	2 mg/12 h	2 mg/12 h
Supplement	2 mg (one by day)	—	IV morphine	—	—	—	1 mg/24 h	—	—
Pain control	Total	Total	Slight	Total	Total	Total	Total	Total	Good
Days on MEA	44	29	12	10	12	27	17	18	16
Change catheter	+	—	+	—	—	—	+	—	+
Cause	Displaced	—	Removed*	—	—	—	Displaced	—	Displaced
Secondary effects	—	Urinary retention	Pruritus	—	Urinary retention	Pruritus Nausea Vomiting	Urinary retention	—	Displaced Urinary retention Pruritus Nausea Vomiting

*Removed in the course of sepsis.

under these situations, as reported by Cousins.¹⁰

The major problem that arises with the use of MEA in the Guillain Barré syndrome is with patients that present respiratory insufficiency secondary to the disease that could be aggravated by MEA. In these patients strict control of their respiratory function is mandatory. The aggravation of respiratory insufficiency by MEA can be treated or prevented by the infusion of naloxone in adequate dosage.¹¹

Through the administration of MEA a total control of pain is reached with low doses of morphine. It is an easy technique to perform, not uncomfortable for the patient and side effects are limited, predictable and controllable. MEA does not result in alterations of motor function nor in the myotatic reflexes or sensory examination.^{10 11 12}

Thus in our experience, at the present time, MEA is the most effective treatment for pain in Guillain Barré syndrome.

We are indebted to Dr J M Vilá for his help in the preparation of the manuscript, and to J A Manrique and to M Bernardos for their technical assistance.

References

- 1 Ropper AH, Shahani BT. Pain in Guillain-Barré Syndrome. *Arch Neurol* 1984;**41**:511-4.
- 2 Arnason BGW. Inflammatory Polyradiculoneuropathies. In: Dyck P, Thomas P, Lambert EH, *et al*, eds. *Peripheral Neuropathy* ed 2. Philadelphia: WB Saunders, 1984,vol2:2050-100.
- 3 Nixon RA. Quinine sulfate for pain in the Guillain-Barré Syndrome. *Ann Neurol* 1978;**4**:386-7.
- 4 Asbury AK. Diagnostic considerations in Guillain-Barré Syndrome. *Ann Neurol* 1981;**Suppl**:9:1-5.
- 5 Hughes RAC, Newsom-Davis JM, Perkins GD. Controlled trial of prednisolone in acute polyneuropathy. *Lancet* 1978;**ii**:750-3.
- 6 The Guillain-Barré Syndrome Study Group: Plasma-pheresis and acute Guillain-Barré Syndrome. *Neurology* 1985;**35**:1096-104.
- 7 Rosenfeld B, Borel C, Hanley D. Epidural morphine treatment of pain in Guillain-Barré Syndrome. *Arch Neurol* 1986;**43**:1194-6.
- 8 Busquets C, Manubens E, Ros J, Baró J. Tratamiento analgésico con morfina por vía epidural en el Síndrome de Guillain-Barré. *Rev Es Anestesia y Reanimación* 1987;**34**:162.
- 9 Behar M, Olshwag D, Magora F, Davison JT. Epidural morphine in treatment of pain. *Lancet* 1979;**i**:527-8.
- 10 Cousins MJ, Mather LE. Intrathecal and epidural administration of opioids. *Anesthesiology* 1984;**61**:276-310.
- 11 Cousins MJ, Bridenbaugh PO. Spinal opioids and pain relief in acute care. In: Cousins MJ, Phillips GD, eds. *Acute Pain Management*. New York: Churchill Livingstone, 1986:151-85.
- 12 Yaksh TL. Spinal opiate analgesia: characteristics and principles of action. *Pain* 1981;**11**:293-346.