Synergistic Response of Intrathecal Narcotics and Baclofen in Spasticity Management

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Introduction

Intrathecal baclofen is an effective treatment for neurogenic spasticity. However, some patients develop refractory symptoms, presumably due to tolerance or incomplete treatment with baclofen alone. Clinically, these patients complain of refractory hypertonus or spasticity-related pain. In this study, we explore the efficacy of adding low dose narcotic to intrathecal baclofen in order to reduce refractory symptoms.

Methods

This is a retrospective case series of eleven patients at Buffalo General Medical Center being treated with intrathecal baclofen for neurogenic spasticity. Seven of the patients had poorly controlled spasticity-related pain. Four of the patients had refractory hypertonus. These patients subsequently underwent addition of low dose intrathecal narcotic to their ongoing baclofen therapy.

Results

When narcotic was added to the intrathecal baclofen, the baclofen dose was initially decreased by twenty percent, and then adjusted for symptom control. In the four patients with refractory hypertonus, marked reduction in tone was achieved at a lower dose of intrathecal baclofen following addition of narcotic. The seven patients with sporadic painful spasms experienced significant improvement in their pain, but no reduction in baclofen dose. The low dose narcotic was well tolerated in both groups, and did not result in any adverse effects.

Table 2

Table 2: Patients with refractory spasms, Group 2

Pt. no. (sex, age)	Dx: Exam	Narcotic	Initial narcotic dose	Final narcotic dose	ITB dose before narcotic (mcg/day)	ITB dose after narcotic (mcg/day)	Pain from spasticity	Pain imp.	Tone issue	Tone imp. after	ITB Dose (+/-)	Length of f/u
8 (M, 32)	TBI: quadriparesis	dilaudid*	0.47	1.41	1079	942.4	no	n/a	yes	no	136.6	5.79
9 (M, 52)	SCI: T8 paraplegia	morphine†	1.64	0.80	560	400	no	n/a	yes	no	160	10.21
10 (F, 40)	TBI: quadriparesis	sufentanil**	3.97	28.00	991.4	770.1	no	n/a	yes	no	221.3	7.30
11 (F, 38)	MS: quadriparesis	morphine†	0.1	0.81	825	649	no	n/a	yes	yes	176	2.50
Average/Total					863.85	690.375	(0/4)	(0/4)	(4/4)	(1/4)	173.475	6.45

Abbreviations: Dx, diagnosis; imp., improved; ITB, intrathecal baclofen; MS, multiple sclerosis; n/a, not applicable; SCI, spinal cord injury; TBI, traumatic brain injury

†morphine is in mg/day. *dilaudid is in mg/day. **sufentanil is in µg/day.

Table 1

Table 1: Patients with spasticity-related pain, Group 1

Pt. no. (sex, age)	Dx: Exam	Narcotic	Initial narcotic dose (mg/day)	Final narcotic dose (mg/day)	ITB dose before narcotic (mcg/day)	ITB dose after narcotic (mcg/day)	Pain from spasticity	Pain imp.	Tone issue	Tone imp. after	ITB dose (+/-)	Length of f/u
1 (M, 46)	SCI: T5 Paraplegia	morphine	1.06	0.32	350	649.8	yes	yes	n/a	n/a	-299.8	8.49
2 (M, 62)	SCI: quadriparesis	morphine	0.98	3.84	736	767	yes	yes	n/a	n/a	-31	1.71
3 (M, 68)	MS: paraparesis	morphine	1.53	1.60	15	49.96	yes	yes	n/a	n/a	-34.96	10.18
4 (M, 50)	MS: paraparesis	morphine	0.90	15.00	600	750.2	yes	yes	yes	yes	-150.2	8.39
5 (M, 52)	SCI: quadriparesis	morphine	1.11	24.00	370	249.98	yes	yes	n/a	n/a	120.02	8.42
6 (F, 51)	SCI: paraplegia	morphine	2.40	2.10	873	524	yes	yes	yes	no	349	2.21
7 (M, 32)	SCI: paraplegia	morphine	2.00	6.50	1050	1015.3	yes	yes	yes	yes	34.7	10.68
Average/Total					570.57	572.32	(7/7)	(7/7)	(3/7)	(2/7)	-1.75	7.15

Abbreviations: Dx, diagnosis; F, female; imp., improved; ITB, intrathecal baclofen; M, male; MS, multiple sclerosis; N/A, not applicable; SCI, spinal cord injury; TBI, traumatic brain injury

Conclusions

This preliminary study suggests that addition of narcotic to intrathecal baclofen is efficacious in the treatment of refractory hypertonus and spasticity-related pain. Our findings demonstrate clinical improvement in all patients that underwent the addition of intrathecal narcotic. This clinical improvement was achieved via either reduction in tone or improvement in spasticity-related pain. Further research is required to investigate the pathophysiology behind these findings.

Learning Objectives

This paper focuses on the role of dual anti-anelgesc and anti-spastic intrathecal therapy.

References

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