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INTRAVENOUS REGIONAL ANALGESIA WITH CLONIDINE, KETOROLAC, AND LIDOCAINE TO TREAT COMPLEX REGIONAL PAIN SYNDROME, TYPE I

Steinberg, R.B.; Manikantan, T.; Reuben, S.S.
Anesthesiology, Baystate Medical Center, Springfield, MA

Intravenous regional anesthesia (IVRA) can contribute to the management of complex regional pain syndrome (CRPS). A variety of medications have been used in IVRA, including local anesthetics with guanethidine, reserpine, bretylium, steroids, and ketorolac. Clonidine, an α -2 adrenergic agonist, has been used successfully in the management of refractory reflex sympathetic dystrophy when administered via the epidural [1] or the intrathecal [2] route. We previously reported the use of IVRA with clonidine and lidocaine to treat CRPS in 10 patients [3]. This report summarizes our subsequent experience treating approximately 250 patients since 1998. We reviewed the charts of 21 patients we treated between Jan. 1 and June 30, 2002. Diagnoses were based on the presence of (four or more): allodynia, hyperalgesia, burning pain, edema, vasomotor and/or sudomotor changes, or a temperature difference between right and left. Most patients had 1 or more sympathetic blocks. Patients initially received a series of up to 4 weekly IVRA treatments using clonidine 1 μ g/kg and ketorolac 30 mg in 40 cc of 0.5% lidocaine, and physical therapy. Subsequent treatments modalities were chosen on the basis of their response to IVRAs. There were no side effects except sedation which usually resolved without treatment within 30 minutes. Most patients noted pain relief of increasing duration in conjunction with increased activity tolerance. It appears that IVRA is most effective for treating CRPS which occurs in the context of soft tissue injuries such as sprains. (Table) In summary, since our original report in 1998, we used IVRA with clonidine, ketorolac, and lidocaine to treat approximately 250 patients with CRPS. This regimen is well tolerated, with very few side effects. A more thorough case review is in progress. We hope to initiate a randomized study comparing IVRA with sympathetic blocks as initial therapy for CRPS.

References:

1. Rauck RL, Eisenach JC et al. Epidural clonidine treatment for refractory reflex sympathetic dystrophy. *Anesth* 79:1163-9, 1993.
2. Kabeer AA, Hardy AJ et al. Long-term use of subarachnoid clonidine for analgesia in refractory reflex sympathetic dystrophy. *Reg Anesth* 21:249-52, 1996.
3. Reuben SS, Steinberg RB et al. Intravenous regional clonidine in the management of sympathetically maintained pain. *Anesth* 89:527-30, 1998.

Injury (No. of Pts.)	Ages (Range)	Symptoms (No. of Pts.)	Duration (Range)	Prior Treatment (No. of Pts.)	Outcomes		
	(Median)		(Median)		Number of Pts.	IVRAs	Results
Soft Tissue Injury (12)	13 - 60 years 36 years	BP: 7 Al: 9 Vm: 5 Sm: 8 Hp: 6 Ed: 7	2 - 24 months 5 months	SB: 10 NS: 11 Op: 3 AC: 7 TCA: 4 NB: 4 Surg: 2	7	2 - 18	≥ 90% relief
					1	12	IVRA q 2 month; VAS 8→3
					1	18	IVRA q month; psychotherapy
					1	≥ 50	IVRA q 2 month for 5 years
					1	1	continuous LSB
Fracture (7)	39 - 51 years 46 years	BP: 5 Al: 6 Sm: 4 Hp: 7 Ed: 3	1 - 36 months 8 months	SB: 6 NS: 7 Op: 3 AC: 4 TCA: 3 Surg: 4	1	2	= 90% relief
					1	2	Ongoing Rx; VAS 10 → 3
					2	1	Ongoing Rx; VAS 6 → 4
					2	1	minimal relief; LSBs
					1	2	minimal relief; opioids
Tarsal Tunnel (1)	49 years	BP, Al, Sm, Hp	1 month	SB, NS, Op, AC, TCA, NB, Surg	1	3	ongoing Rx; VAS 6 → 4
					1	1	lost to follow-up
Ulnar Neuropathy (1)	75 years	Al, Hp	8 months	AC	1	1	lost to follow-up
Symptoms: BP, burning pain; Al, allodynia; Vm, vasomotor changes; Sm, sudomotor changes; Hp, hyperpathia; Ed, edema							
Prior Rx: SB, sympathetic blocks; NS, nonsteroidal antiinflammatories; Op, opioids; AC, anticonvulsants; TCA, tricyclic antidepressants; NB, peripheral nerve blocks; Surg, surgery							