

Table 2. Outcomes of Studies of Vertebroplasty for Osteoporotic Vertebral Fractures

Study/yr	N	F/U	Outcome measure	Pre-treatment	Post-treatment ¹	p-value ¹	Comments	
<i>Case series studies</i>								
Grados 2000	25	48 mos (mean)	Pain (0–100 VAS)	80	<u>1 mo</u> 37 <u>final f/u (12-84 mos)</u> 34	<0.05	Represents results of 25 out of original cohort of 40	
McGraw 2002	100	Periop period	Pain (0–10 VAS)	8.9 ± 1.1	2.0 ± 2.0	<0.0001	93% of pts reported improvement in back pain	
Kauffman 2001	75	7 day (mean)	Pain (0–10 VAS)	9.4	1.9	<0.001		
			Mobility (0–4 scale)	1.4	0.4	<0.001		
			Analgesic use (0–5 scale)	3.0	1.4	<0.001		
Chen 2004	70	≥1 yr	Pain (0-100 VAS)	80 ± 16	<u>1 d</u> <u>1 mo</u> <u>final f/u</u> 38 ± 24 36 ± 28 30 ± 19	0.02 (final f/u)	N=70 at all time points	
Winking 2004	38	1 yr	Pain (0-10 VAS)	6.9 (med)	<u>2d</u> <u>6wk</u> <u>6mth</u> <u>1yr</u> 1.8 2.6 2.7 2.7	p<0.001 for all time points	Appears that all patients followed for 1 yr	
			Disability (OLBPD)	3.7 ± 0.2	1.7 ± 0.1			1.6 ± 0.1
			Total analgesic use	100%	↓70%			
Zoarski 2002	30	15–18 mos	MODEMS Modules		<u>2 wks</u> <u>15-18 mos</u>		n=23 for 15–18 mos follow-up	
			Pain/disability	42.3 ± 18.0	61.5 ± 17.3	<0.0001		
			Physical function	23.2 ± 6.0	27.3 ± 6.9	=0.0004		
			Mental function	45.6 ± 12.9	50.5 ± 10.8	=0.0009		
			Pain (0–10 VAS)	9.7	1.7* 2.6*	*<0.0001		
Cytevel 1999	20	periop	Pain (0–10 VAS)	8.5	3.7	<0.001		
Chen 2002	50	1 mo	Pain (1–100 VAS)	82	<u>1 d</u> <u>1 mo</u> 37 32	<0.05		
Kobayashi 2004	175	1 day	Pain (1–10 VAS) % pain-free, VAS=0 % VAS improved	7.22 ± 1.89	<u>1 d</u> 2.07± 1.19 22.4% postop VAS = 0 74% postop VAS improved ≥1 unit	<0.0001	Interval to mobilization 1.9 mean days. 94/115 mobile by 24 hours.	
Alvarez 2005	278	3 wks	Pain (1-10 VAS) Postop VAS scores % ≤3 VAS “complete” % 4–6 VAS “moderate” % ≥7 VAS “no relief”	8.9	<u>3 wk</u> <u>last f/u (range 3 wk-96 mos)</u> 3.0 2.7 67% 25% 7.5%	NR	2 or less fractures, ASA status 1, MRI signal changes, <70% vertebral height loss, associated with higher probability of better outcome	

Abbreviations: See Appendix Table

Table 2. Outcomes of Studies of Vertebroplasty for Osteoporotic Vertebral Fractures (cont'd)

Study/yr	N	F/U	Outcome measure	Pre-treatment	Post-treatment ¹				p-value ¹	Comments
<i>Case series studies (cont'd)</i>										
McKiernan 2005	46	6 mos	Pain (1–10 VAS)	7.7	<u>1 d</u> 2.8	<u>2 wks</u> 4.5	<u>2 mos</u> 3.2	<u>6 mos</u> 3.5	<0.001	Values visually estimated from graphs, drop-out rate unknown, but at least 5 deaths before 6 months. Multivariable analysis attempted, no significant findings associated with pain relief.
			Quality of Life (1–7)						all p <0.05 for baseline vs. 2 wks	
			Symptoms	2		4	4	4.5		
			Physical Function	2		3.5	4.2	5		
			Act Daily Living	2		3.5	3.5	4		
			Leisure	2.5		4.2	5	5		
			Emotional Function	3.5		4	4.5	5		
<i>Comparative studies</i>										
Diamond 2003	55	6.8 mos (mean)	Pain (0–25 VAS): VP	19 ± 4	<u>1 d</u> 9 ± 5*	<u>6 wks</u> 5 ± 4	6–12 mos 4 ± 4		*p<0.0001	N unstated for long-term follow-up
			Ctrl	20 ± 5	19 ± 6	7 ± 5	4 ± 6			
			Barthel index: VP	14 ± 4	18 ± 3*	19 ± 2	19 ± 1			
			Ctrl	13 ± 5	13 ± 5	17 ± 4	18 ± 3			

¹ p-values for pre- post- (within-group) comparisons unless otherwise specified

Abbreviations: See Appendix Table