

PERCUTANEOUS VERTEBROPLASTY (PV) IN THE OSTEOPOROTIC PATIENTS: OPTIMAL INDICATIONS AND PATIENT SELECTION TO IMPROVE CLINICAL OUTCOME
PERSONAL EXPERIENCE IN 1542 PATIENTS OVER 7 YEARS EXPERIENCE

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All authors have nothing to disclose

PURPOSE

Patients selection, optimal indications and post-procedural management to achieve the best clinical outcome

Patients Pre-Procedural Evaluation

Since 2002, 2251 osteoporotic pts (1811 female, mean age 65.4 ± 10.7 yrs), suffering from back-pain for vertebral collapses, underwent clinical interview in our Institute.

- ✓ All patients had 1 or more vertebral fracture at MRI
- ✓ Clinical palpation of fractured vertebrae evoked pain in 1860 (82,6%)
- ✓ 842 (45,3%) had pain duration <1 month
- ✓ Only 661 /2251 (29,4%) had previous medical treatment for osteoporosis by a qualified rheumatologist!

Patients Population

After optimal medical treatment was applied, (from 1,5 to 3 months), 709/2251 (31,5%) reported back-pain regression and scheduled PV was not performed

- ✓ 1542 pts (1302 female, mean age 73.5 ± 9.8 yrs), not improved by medical therapy and with collapsed vertebrae at MRI (1204 with bone marrow edema), underwent to PV
- ✓ Optimal medical therapy for osteoporosis was continued in all pts by rheumatologist after PV
- ✓ Early follow-up evaluated VAS and Oswestry Disability Index at 3 months

Early Results

(3 months follow-up)

PV was completed in all 1542 patients without major complications

1494/1542 patients (96,9%) reported backpain relief

- ✓ VAS from $8,2 \pm 1,8$ to $1,1 \pm 1,6$ ($p < .0005$ Wilcoxon signed test)
- ✓ ODI from $68,7 \pm 7,6\%$ to $18,5 \pm 8,2\%$ ($p < .0005$ t-test)

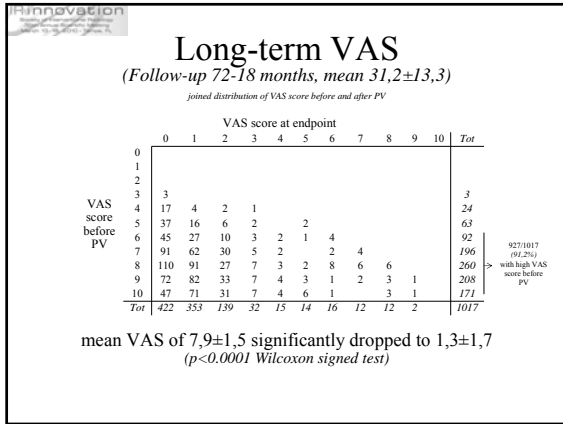
Long-term Results

(Follow-up 72-18 months, mean $31,2 \pm 13,3$)

Long-term follow-up prospectively evaluated (15 days, 1, 3, 6, 12, 18 and every 6 months) VAS, analgesic drug assumption, external brace support and new vertebral fracture occurrence in:

1017 pts (857 female, mean age $72 \pm 10,3$ yrs)

All pts underwent optimal medical therapy for osteoporosis by experienced rheumatologists



Long-term Drugs assumption

(Follow-up 72-18 months, mean 31,2±13,3)

joined distribution of analgetic therapy before and after PV

Antalgic therapy before PV	Antalgic therapy after PV					Tot
	None	NSAIDs	Oral narcotic	Transdermic Intravenous narcotic	Others	
None	16					16
NSAIDs	725	112				837
Oral narcotic	50	24	6			80
Transdermic Intravenous narcotic	38	35		7		80
Others	1				3	4
Tot	830	171	6	7	3	1017

NSAIDs: non-steroidal anti-inflammatory drugs

830 (81.6%) of 1017 patients did not need any medication after PV and 171 (16.8%) use only NSAIDs

Long-term Brace Support

(Follow-up 72-18 months, mean 31,2±13,3)

Brace before PV	Brace after PV		Tot
	No	Yes	
No	259	1	260
Yes	683	74	757
Tot	942	75	1017

among 757 pts wearing the brace before PV, 683 (90.2%) could avoid it after PV ($\chi^2=680.01$, p<.0001)

Long-term New Fractures

(Follow-up 72-18 months, mean 31,2±13,3)

124/1017 (12,2%) reported a new painful vertebral fracture during follow-up

New Fracture	N°	%
No	893	87.8
Yes	124	12.2
Distant vertebrae	42	33.9
Contiguous vertebrae	82	66.1
Below vertebra	34	41.4
Above vertebra	29	35.4
Below and Above vertebrae	19	23.2

There is a significant higher proportion of contiguous vertebrae then distant ones ($z = 7.59$ p-value 0.025)

New Fracture during 18 months Follow-up

Among 1017 patients, 606 women (age over 65, 1 or more prevalent fractures at PV and follow-up equal or longer than 18 months), with the same demographic characteristics as the patients reported by Lindsay and coworkers

PVP vs. Placebo & Teriparatide

Type of Pain Treatment	1 or more fracture at baseline	New Fracture During 18 months	%	χ^2 p-values
Pts PVP <small>Personal Series Postmenopausal Women only</small>	606	76	12,5	
Placebo <small>Lindsay et al. Arch Intern Med 2004; 164:2024-2030.</small>	353	67	18,9	0.0069
20µG Teriparatide <small>Lindsay et al. Arch Intern Med 2004; 164:2024-2030.</small>	373	42	11,2	0.5499
40µG Teriparatide <small>Lindsay et al. Arch Intern Med 2004; 164:2024-2030.</small>	345	36	10,4	0.3326

No significant difference was noticed for both low doses (20µG Teriparatide) and high doses (40µG Teriparatide) therapy

Conclusions

Despite recently published NEJM trials (1,2), in our experience PV is effective in treatment of chronic back-pain due to osteoporotic vertebral collapses undermanaged by optimal medical therapy lasting from 1 to 3 months. To achieve the best clinical outcome, optimal pts selection, correct indications and optimal medical treatment of osteoporosis are mandatory

- Buchbinder R et al. A randomized trial of vertebroplasty for painful osteoporotic vertebral fractures. N Engl J Med. Aug 6 2009;361(6):557-568
- Kallmes DF et al. A randomized trial of vertebroplasty for osteoporotic spinal fractures. N Engl J Med. Aug 6 2009;361(6):569-579