The efficacy of epidural injections with or without platelet rich plasma in treatment of patients with lumbal back pain

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Introduction. Low back pain is a major health issue limiting of life quality. There has been a widespread use of epidural injections (EI) with steroids. Platelet Rich Plasma (PRP) is a novel therapeutic tool.

Aim of the study. The aim of the study was to evaluate efficacy after EI with or without PRP in lumbal back pain patients.

Materials and methods. Fifty-one patients were included in this prospective study in 2018, with an average age of 55 ± 15 years. Table 1.

- EI group** - a control group of 26 patients received an epidural injection of methylprednisolone 80 mg and bupivacaine 5mg.
- PRP + EI group** - the intervention group, comprised of 25 patients, received the same solution, along with 8 ml of autologous PRP on multiple facet joint levels.

All patients received another EI of methylprednisolone and bupivacaine, 2 weeks after . Outcomes were pain scores (Visual Analogue Scale, VAS 0-10)) and overall improvement: at 2 weeks, 3 and 6 months.

Table 1

Parameter	PRP +EI group, N = 25	EI group, N = 26	P value
Females, n (%)	18 (72%)	14 (54%)	0.20
Males, n (%)	7 (28%)	12 (46%)	0.20
Age, years	58 ± 14	52 ± 16	0.13
Weight, kg	78 ± 14	83 ± 23	0.40
BMI, kg/m²	27 ± 4	27 ± 6	0.85
VAS before procedure	4 ± 2	6 ± 2	0.001

Diagnosis: disk protrusion (n=15), disk hernia (N=11), spinal stenosis (N=9), facet joint syndrome (N=8), spinal stenosis with spondilolisthesis (N=5), spondilolisthesis (N=3).

Conclusions. EI combined with PRP injections on facet joins might demonstrate better improvement, particularly, in longer time period in patients with low back pain.

Results. Changes of pain score in dynamic is demonstrated in Table 2. Clinical improvement in % is presented in Table 3. After 6 months clinical improvement returned to 53%. Reduced improvement with increased VAS scale was presented in EI group 38%, with significant intergroup difference p < 0.001.

After 6 months presence of back stiffness significantly decreased only in PRP+EI group, as shown in Table 4.

For patients receiving PRP+EI significantly more often persistent pain changed to periodical demonstrated in figure 1.

Table 2

Group	Baseline	After 2 weeks	P value	After 3 months	*P value	After 6 months	**p value
PRP+EI, N = 25	4 ± 2	2 ± 2	< 0.001	2 ± 2	0.001	2 ± 2	0.003
EI, N = 26	6 ± 2	4 ± 2	< 0.001	4 ± 2	< 0.001	4 ± 2	0.007

* Comparing baseline and after 3 months

** baseline and after 6 months

Table 3

Group	After 2 weeks %	After 3 months %	After 6 months %	P value
PRP+EI, N = 25	55 ± 27	62 ± 31	53 ± 33	0.8
EB, N = 26	47 ± 30	45 ± 38	38 ± 36	0.2

Table 4

Symptoms	Group	Baseline	After 2 weeks	After 3 months	After 6 months	P value
Night pain, n (%)	PRP+EI	11 (44%)	5 (20%)	7 (28%)	6 (24%)	0.14
	EB	15 (58%)	10 (38%)	7 (27%)	9 (35%)	0.09
Tingling, n (%)	PRP +EI	12 (48%)	6 (24%)	5 (20%)	7 (28%)	0.14
	EB	13 (50%)	8 (31%)	6 (23%)	8 (31%)	0.16
Back stiffenss n (%)	PRP+EI	18 (72%)	14 (56%)	10 (40%)	7 (28%)	0.02*
	EB	14 (54%)	11 (42%)	10 (38%)	10 (38%)	0.30
Numbness, n (%)	PRP +EI	4 (16%)	4 (16%)	3 (12%)	3 (12%)	0.70
	EB	5 (19%)	4 (15%)	4 (15%)	4 (15%)	0.70

Figure 1