

PREDICTOR FACTORS FOR SURGERY AFTER INTERVENTIONAL PAIN TREATMENT IN LUMBAR RADICULAR PAIN DUE TO HERNIATED DISC

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Unless epidural steroids injections (ESI) could decrease pain and to avoid surgery in lumbar radicular pain due to Herniated Disc (HD), it's unknown whether other factors could influence the likelihood of surgery (1,2)

1. OBJECTIVE:

We studied different factors after ESI performed with triamcinolone and ropivacaine 0.2% in patients affected by radicular pain due to HD who didn't avoid surgery at one year follow-up .

2. PATIENTS and METHOD

An ambispective study was conducted from 2010 to 2013 with a cohort of 146 patients with radicular pain due to HD and nonresponders to conservative treatment. When numerical rate pain scale (NRPS) was ≥ 4 , ESI was performed with triamcinolone 0.5-1 mg/kg and ropivacaine 0.2% by interlaminar, caudal or transforaminal route with fluoroscopy guidance.

Demographic factors, duration of pain before treatment, NRPS at baseline and at 1-3 and 6 months and not surgery at 1 year were recorded prospectively.

CT/MRI radiographic findings were retrospective analysed:

- HD axial localization (Image 1):
 - Central or Posterior and paramedial
 - Subarticular or posterolateral and midlateral
 - Foraminal or lateral and extraforaminal.
- Extrusion, migration
- Nerve root involvement
- Spine structural abnormalities (canal stenosis, foraminal stenosis)

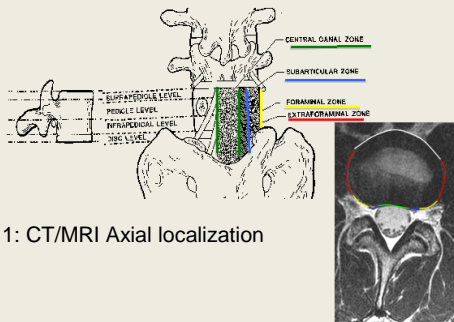
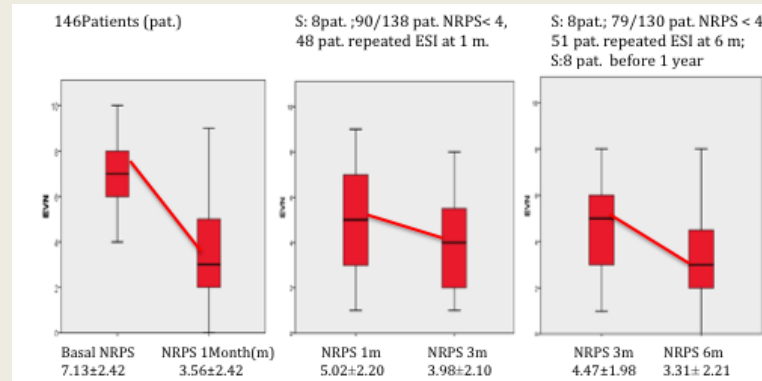


Image 1: CT/MRI Axial localization

Statistic analyses: Multivariate analyses were performed using logistic regression and Classification Regression Trees (CRT) model.

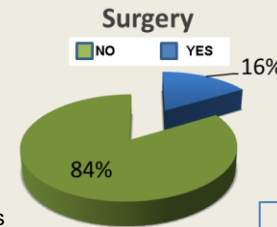
3. RESULTS:

- From 146 patients: 56.8% female, main age: 56.36 (± 14.8 SD) 43.2% male, main age: 50.67 ($\pm 16,1$ SD)
- Duration of pain previous to ESI was 8 months ($\pm 7,64$ SD)
- NRPS baseline was 7,13 ($\pm 2,42$ SD)
- Evolution of the NRPS and Surgery (S) throughout the treatment :



3.A. Surgery:

Patients required surgery were 16,45%.



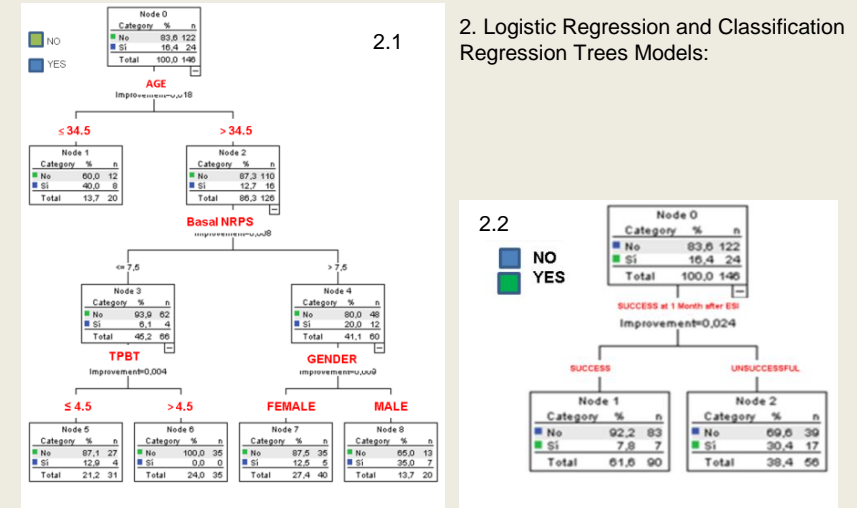
3.B. Predictor factors for surgery:

3.B.1 Multivariate Analyses::

- Red underlined items were risk factors for surgery
- To be male had 3.587 times more risk.
- For each point of increment in basal NRPS increases 1,589 times the risk of surgery.

	HR	IC 95%	Sig.
<u>Male</u>	<u>3.587</u>	1.345 – 9.563	0.011
TPBT	0.940	0.869 – 1.016	0.116
<u>Basal NRPS</u>	<u>1.589</u>	1.154 – 2.189	0.005
Constant	0.005		0.000

HR: Hazart Ratio; TPBT: time with pain before treatment in months



2.1 Three types of patients according to the likelihood of surgery:	% Surgery
Age ≥ 35 years, Basal NRPS ≤ 7 , TPBT > 4 meses	0%
Age ≥ 35 years, Basal NRPS ≤ 7 , TPBT ≤ 4 meses	12.7%
Age ≥ 35 years, Basal NRPS > 7 , female	37.5%
Age ≥ 35 years, Basal NRPS > 7 , male	
Age ≤ 34 years	

2.2 Including success after ESI at 1 month (NRPS ≤ 3 , NPRS descending 4 points and not surgery) 30,4% of non-responders were operated.

Anatomical findings regarding CT/MRI were not predictors of surgery.

4. CONCLUSIONS

Worst predictive factors for surgery after ESI were: age ≤ 34 , male gender, NRPS baseline greater than 7 and lack of improvement after ESI at 1 month. It is important to keep in mind these factors when we start our interventional treatments in radicular pain due to HD.

1. Kreiner DS, Hwang SW, Easa JE et al. An evidence-based clinical guideline for the diagnosis and the treatment of lumbar disc herniation with radiculopathy. Review article. The Spine Journal 2014; 14: 180-191
2. Bicket MC, Horowitz JM, Benzon HT et al. Epidural injections in prevention of surgery for spinal pain: systematic review and meta-analysis of randomized controlled trials. Review article. The Spine J 2015; 15: 348-362