

# Transforaminal Epidural Injection Within 3 Months ; Better Outcome in the Postherpetic Neuralgia

Sangwon Kwak, Francis Sahngun Nahm\*, Eun Joo Choi\*, Pyung Bok Lee\*  
 Department of Anesthesiology & Pain Medicine, Sheikh Khalifa Specialty Hospital, Ras Al Khaimah, UAE  
 \*Department of Anesthesiology & Pain Medicine, Seoul National University Bundang Hospital, Korea

## Introduction

- **Postherpetic neuralgia (PHN)**
  - Post herpetic neuralgia (PHN) is a chronic neuropathic pain condition following herpes zoster infection.
  - The cause of HZ has been known to be reactivated varicella zoster virus in the dorsal root ganglion (DRG) or trigeminal ganglion.
- **Transforaminal steroid injection (TFSI)**
  - TFSI allows the direct delivery of a drug to the target nerve in close proximity of the DRG.
  - Although many physicians perform TFSIs for the treatment of PHN, it is not known which factors of the patients are associated with the outcome.
- **The study purpose**
  - The purpose of this study was to identify which clinical factors of TFSI are related to the outcome in the treatment of PHN.

## Materials and Methods (1)

- **Study design:** Retrospective cohort study
- **Patients**
  - Patients who were affected by PHN at thoracic and lumbar dermatomes
  - Patients who received TFSIs from January 2012 to June 2014 at the pain center of Seoul National University Bundang Hospital, Korea.
  - Patients were classified into two groups; "effective (E) group" and "non-effective (N) group" based on the results at 3 months follow up after TFSIs.
  - E group:  $\geq 50\%$  reduction from the average daily pain intensity
  - N group:  $< 50\%$  reduction from average daily pain intensity

## Materials and Methods (2)

- **Data collections**
  - Patient's: age, gender, symptom duration before the 1<sup>st</sup> TFSI, affected dermatome, initial pain intensity, additional TFSI requirement
  - History of diabetes mellitus, cancer
- **Statistical Analysis**
  - Student t-test for continuous variables
  - Chi-square test for categorical variables
  - Binary logistic regression analysis
  - Receiver operating characteristic (ROC) curve analysis to determine the cutoff value of symptom duration as a predictor of TFSI effectiveness.

## Results

- **Patients' demographics (total 202 patients)**

	N group (n = 85)	E group (n = 117)	P value
Sex (M/F)	40/45	50/67	0.542
Age (years, mean $\pm$ SD)	68.3 $\pm$ 9.5	67.3 $\pm$ 10.9	0.496
<b>Symptom Duration (weeks)</b>	21.1 $\pm$ 17.9	11.5 $\pm$ 14.9	<b>&lt; 0.001</b>
Region (Thoracic/Lumbar, n)	75/10	105/12	0.734
Initial pain score (NRS)	6.3 $\pm$ 2.0	6.3 $\pm$ 1.6	0.952
Additional TFSI (Y/N)	17/68	23/94	0.952
History of diabetes (Y/N)	21/64	27/90	0.788
History of cancer (Y/N)	6/79	6/111	0.567

## Results

- **Odds ratio (OR) and 95% confidence intervals (CI)**

Variables	P values	OR	95% CI
<b>Sex</b>			
Male		Reference	
Female	0.632	0.856	0.454-1.615
<b>Age</b>			
> 60 years		Reference	
$\leq$ 60 years	0.339	0.705	0.344-1.443
<b>Symptom Duration</b>			
> 12 weeks		Reference	
$\leq$ 12 weeks	<b>&lt; 0.001</b>	0.148	0.077-0.286
<b>Initial pain score (NRS)</b>			
> 4		Reference	
$\leq$ 4	0.489	1.136	0.588-3.035
<b>Additory</b>			
No		Reference	
Yes	0.649	0.833	0.378-1.832
<b>History of diabetes</b>			
No		Reference	
Yes	0.944	1.027	0.494-2.135
<b>History of cancer</b>			
No		Reference	
Yes	0.326	1.883	0.532-6.662

- **ROC curve analysis**

- Best cut off point: Symptom duration of  $\leq 12$  weeks
- Sensitivity 84.6%, specificity 56.6%, area under the curve 0.716

## Conclusions

- **TFSIs seem to be helpful in the PHN patients when performed within 12 weeks.**