

# Interspinous Devices in Surgical Treatment of Lumbar Spine Stenosis: Clinical and Radiological Outcome Analysis With 10-year Follow-up.

Giuseppe Barbagallo MD; Francesco Certo MD; Stefano Palmucci

Department of Neurological Surgery - Policlinico "G. Rodolico" University Hospital of Catania, Catania - Italy

## Introduction

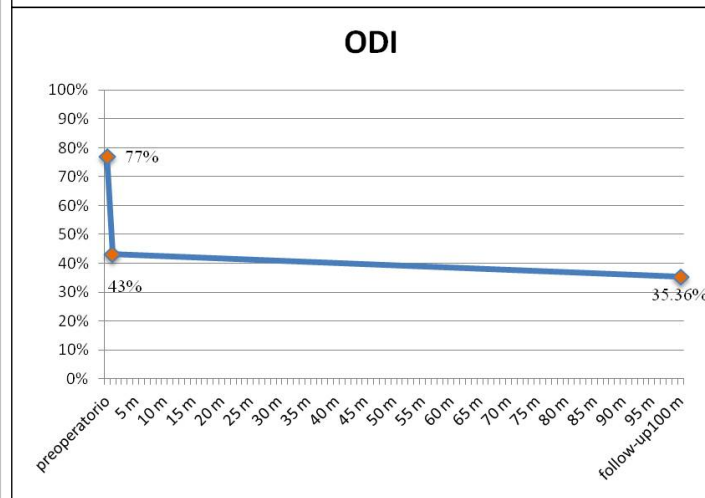
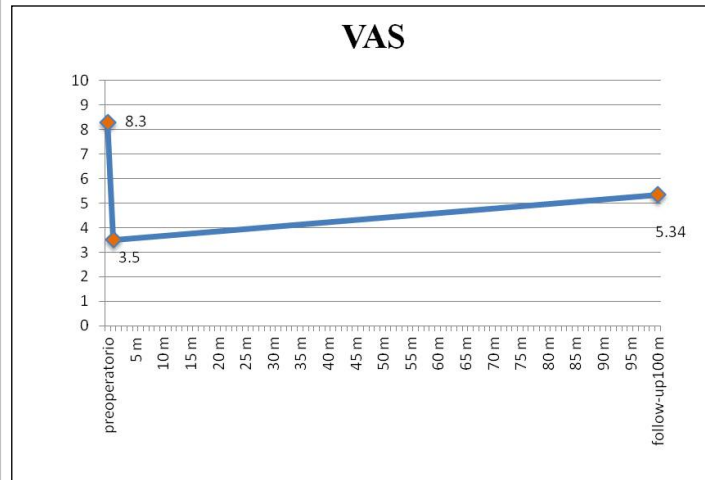
Interspinous devices have been extensively used over last decades for degenerative lumbar spine disorders. Several clinical studies have been published on short and medium-term follow-up of patients treated with interspinous devices. However, only few papers focused on the long-term outcome of these patients. This study shows the results of clinical and radiological long-term follow-up (maximum 10 years) of patients treated with interspinous devices.

## Methods

80 patients (44 male) were included. They underwent implant of interspinous devices at one or two spinal levels (106 devices implanted). 35 of them (20 males) completed the follow-up (mean: 100 months; range: 44-121). Clinical evaluation was performed using Visual Analogue Scale (VAS), Oswestry Disability Index (ODI), and Zurich Claudication Questionnaire (ZCQ). Pre- and post-operative x-rays and CT were collected. Flexion/extension X-rays were also obtained at last follow-up visit, to measure segmental lordosis and range of motion (ROM). Interspinous heterotopic ossification (HO) was quantified according to Tian et al. criteria on follow-up CT scan.

## Results

Mean VAS score decreased from 8.30 to 3.50 ( $p < 0.01$ ) at post-operative evaluation, but it was 5.34 at last follow-up visit. Similarly, mean ODI significantly decreased at post-operative assessment ( $p < 0.01$ ) and it slightly increased during follow-up. 40% of patients had mild/moderate symptoms at last follow-up and 43% of patients were satisfied by treatment. In 9/35 (25.7%) cases (suffering from grade-I spondylolisthesis) interspinous devices were dislocated at last radiological evaluation. Seven of these patients underwent revision surgery. Four patients (with double level implant) had spinous process fractures. Segmental lordosis was maintained in all cases. HO was detected in 77.27% of patients with complete interspinous bone fusion and abolition of segmental movement in 13.64% of patients.



## Conclusions

Interspinous devices are associated with high rate of HO but this is often not clinically relevant. Late complications are more frequent in patients with spondylolisthesis.

## HO evaluation after 10-year FU



### Heterotopic ossification evaluation

- Grade 0: 5 pts (22,7%);
  - Grade 1: 4 pts (18,18%);
  - Grade 2: 10 pts (45,45%);
  - Grade 3: 3 pts (13,64%).
- 3 pts with spinous processes fusion

## References

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