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# **Life quality improvement and patient satisfaction after instrumented lumbar fusion in the elderly compared with young population**

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Degenerative lumbar disease is a common problem among the elderly population.

The increase in life expectancy and improvement in the quality of life are leading to an increase in demand for its treatment.

Often, the pain and neurogenic claudication are responsible of a severe disability and generates the dilemma of summiting to the elderly patient to a major surgical procedure.

1. The increase in the quality of life could be comparable to a TKR/THR.
2. It may not be generating an increase in cost or demand for health care.



- Rampersaud YR, Ravi B, Lewis SJ, et al. Assessment of health-related quality of life following surgical treatment of focal symptomatic spinal stenosis compared to osteoarthritis of the hip or knee. *Spine J.* 2007;8:296-304.
- Andersen T, Bünger C, Sogaard R. Long-term health utilisation and costs after spinal fusion in elderly patients. *Eur Spine J.* 2013;22:977-984

**In the past, an advance age was considered a contraindication for instrumentation.**

**In other occasions they underwent insufficient decompression to avoid the use of instrumentation.**

Literature does not show clearly to what extent the elderly patient can benefit from the use of instrumentation:

1. Many studies on decompression - small number of studies about fusion and instrumentation.
  2. Most of the studies focus on the analysis of the complications.
  3. It has not been established yet a correlation between the occurrence of a complication and its impact in clinical outcome.
  4. The impact of the lumbar arthrodesis in the function and health of the elderly patient is not established
- *Glassman SD, Carreon LY, Dimar JR . Clinical outcomes in older patients after posterolateral lumbar fusion. Spine J. 2007 Sep-Oct;7(5):547-51*

# Objective.



Determine the clinical outcome and improvement in quality of life obtained by a group of elderly patients undergoing lumbar instrumented arthrodesis, and compare it to the results in a group of younger population.

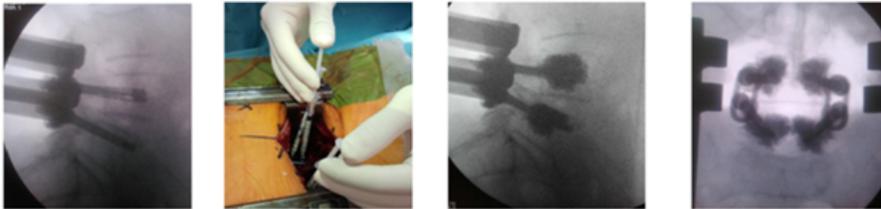
- Perioperative parameters.
- Clinical evaluation: complications and pain Visual Analogue Scale (VAS).
- Functional assessment: Oswestry Disability Index (ODI).
- Radiological assessment.
- Assessing patient satisfaction: Core Outcome Measure Index (COMI)

# Material y method.

- Descriptive retrospective study with 194 consecutive patients treated by lumbar Arthrodesis of 1 or 2 levels.
  - Group I.- 67 patients >75 years (average 77.8 y)
  - Group II.- 127 patients <65 years (average 47 y)

## Surgical diagnosis Group I >75 years (n=67)

- Stenosis: 33 (49.2%)
- Listhesis: 31 (46.2%)
- Degenerative Disc Disease : 1 (1.5%)
- Revision: 2 (3%)



Arthrodesis with PMMA-augmented fenestrated pedicle screws

## Surgical diagnosis Group II <65 years (n=127)

- Stenosis: 13 (10.2%)
- Listhesis: 39 (30.7%)
- Degenerative Disc Disease: 60 (47.2%)
- Revision: 15 (11.8%)



Instrumented Posterolateral / Intersomatic PLIF

- Mean follow-up 21.47 months (range 76-12 months)
- Surgical indication:
  - Neurogenic claudication. - Radicular pain +/- neurological deficit.
  - Persistent low back pain and disability + Xray instability

# Results.



## 1.- Perioperative Parameters.

	Group I >75 years	Grupo II <65 years
ASA	2.4	1.7
2 o more systems affected	44.7%	12.5%

The patient >75 years shows a more compromised baseline general health

	Group I >75 years	Groupo II <65 years
Surgical time	146.48 min.	140 min.
Difference in Pre-post Hb	3.18 g/dl	2.96 g/dl
Hospital stay	7.56 days	5.83 days

## 2.- Clinical assessment.

	Group I >75 years	Group II <65 years	
Complications	18 (26.86%)	22 (17,68%)	p=0.704
Revision	10 (14.92%)	11 (8.66%)	
Deaths	1 (Respir Infec.)	0	

There is no statistically significant difference in the occurrence of complications between both groups

	Group I >75 years		Group II <65 years	
	Preop	1 year	Preop	1 year
Pain (VAE)	7.53	3.66	8.25	3.54



There is no statistically significant difference between the VAE values of both groups at year of follow-up

### 3.- Functional assessment

	Group I > 75 years		Group II < 65 years	
	Preop.	1 year	Preop.	1 year.
Oswestry (ODI)	61.26	30.52	52.77	22.91

There is a statistically significant difference between baseline and the end of follow-up in the ODI scores of both groups

However, there is no significant difference in the decrease of the ODI in both groups at one year of follow-up.

Reduction >50% in both groups

## 4.- Radiologic assessment

	Group I >75 years	Group II <65 years
Pseudoarthrosis	2 (2.98%)	2 (1.57%)
Adjacent level fracture.	2 (2.98%)	0
Adjacent disc disease	15 (22.38%)	11 (8.66%)

Patients older than 75 years have a significant increase in the risk of adjacent disc disease

## 5.- Patient satisfaction.

	Group I >75 years	Group II <65 years	
COMI 2 (difficulty for daily living activities)	1.49	2.72	p<0.001
COMI 3 (same pain for the rest of life)	1.66	2.66	p=0.056
COMI 6b (satisfaction with treatment received)	76.2%	72.4%	p=0.0395

One year after the surgery, the rate of satisfaction with the treatment received was similar in both groups

# Conclusions.



Despite the risk of complications, the elderly patient obtains a clear benefit from surgical treatment for lumbar degenerative disease.

The improvement experienced by the elderly patient undergoing surgery for degenerative lumbar disease is clinically and statistically significant.

Despite a greater number of complications, these do not translate into a decrease in quality of life after surgery.

# Conclusions.



Nowadays, based on a:

1. Correct patient selection.
2. Instrumentation suitable to bone fragility.
3. Safe surgical technique.

it is possible to provide effective surgical treatment to elderly patients with lumbar degenerative disease.

The results of this study support the efficacy and safety of instrumented arthrodesis in degenerative lumbar disease in the elderly patient older than 75 years.