

# Anterolateral versus posterior minimally invasive interbody fusion for patients with spondylolisthesis: 12 months follow-up

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On behalf of the Master-D2 Study Group

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# Objective

Choice between anterolateral versus posterior minimally invasive (MI) lumbar interbody fusion (LIF) in degenerative spondylolisthesis (DS) patients ?

Comparison of :

- mid-term patient reported outcomes (PROM)
- fusion rates at 1-year follow-up

# Study design

**MASTERS-D 2:** ongoing, prospective, global, long-term follow-up study investigating MIS/MAST technologies in adults with degenerative disc disease indicated for a 1 of 2 level lumbar interbody fusion procedure.

*Clinicaltrials.gov: NCT02617563*

Surgery data  
VAS, Pain Meds, AEs

Fusion success

Anterolateral: ALIF, DLIF, OLIF

Posterior: MIDLF, PLIF, TLIF

Baseline

1m

3m

1y

2y

3y

4y

5y

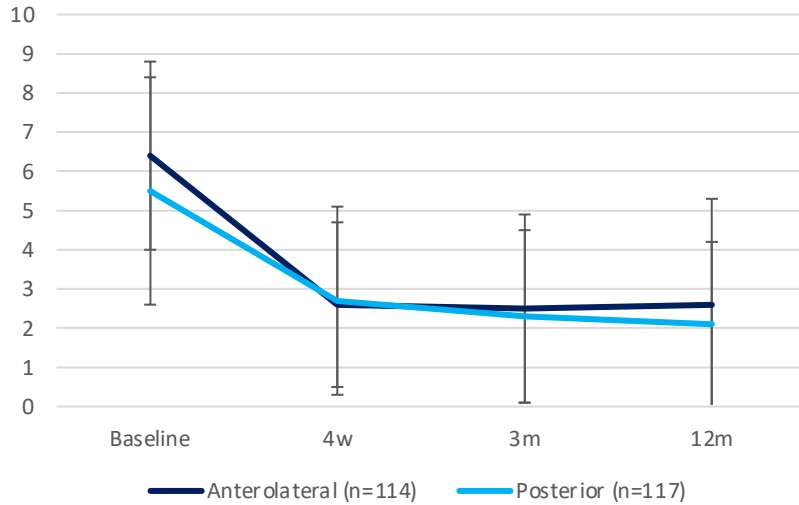
Safety, ODI, VAS back pain, VAS leg pain, EQ-5D

# Preoperative demographics

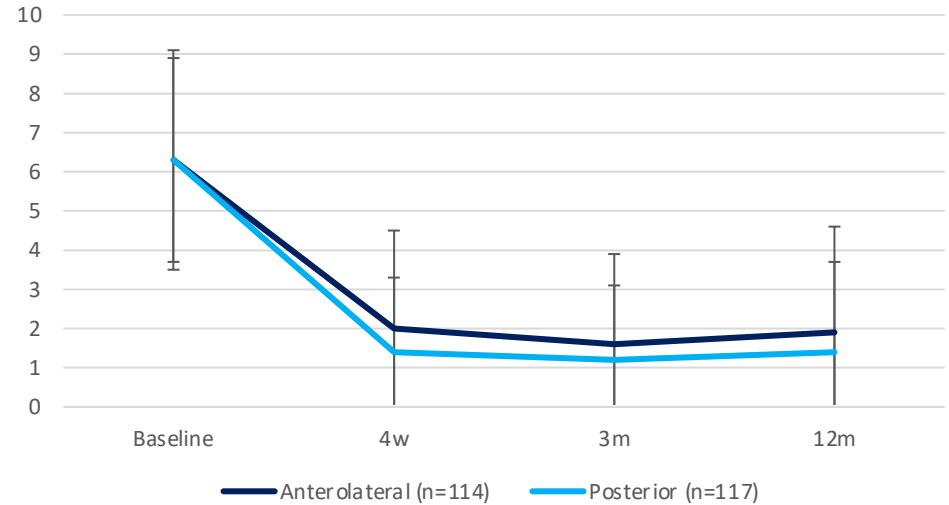
	Anterolateral n=114	Posterior n=117	p-value
Age, mean (SD)	56.9 (10.3)	62.1 (10.3)	<.001
Females (%)	60.5	66.7	.342
BMI, mean (SD)	27.4 (4.2)	26.7 (4.5)	.217
Months of conservative care, mean (SD)	25.9 (29.4) n=112	20.0 (23.7) n=106	.104
Back pain (%)	96.5	89.7	.067
Leg pain (%)	93.9	92.3	.797
Tobacco use (%)	22.8	12.8	.058
Unemployed (%)	50.9	76.1	<.001

# Pain (VAS)

Mean back pain (VAS)



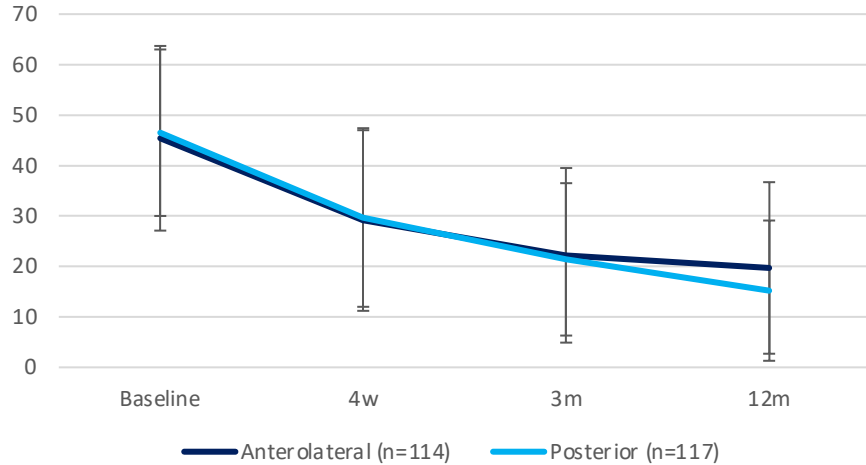
Mean leg pain (VAS)



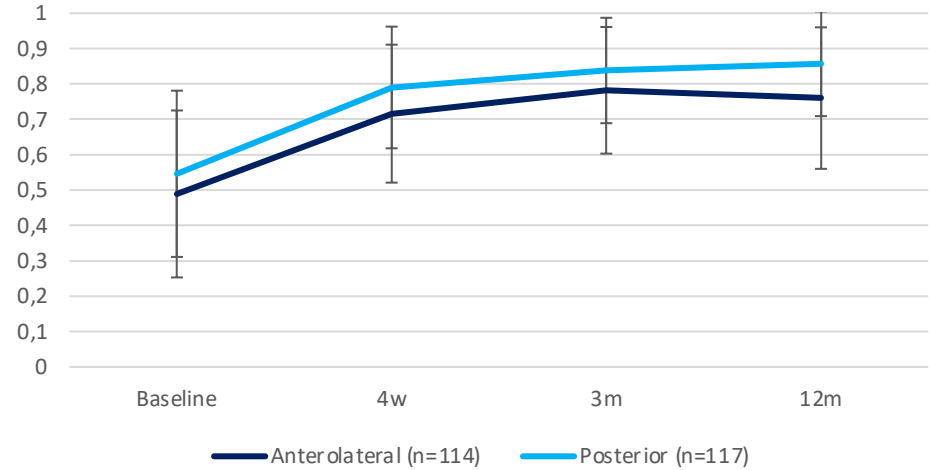
Similar improvement in both groups without significant differences

# Disability and QoL scores

Mean Disability (ODI)



Mean quality of life (EQ-5D Index)



Significant improvement between pre-op and 1-year FU for both scores ( $p < 0.001$ )

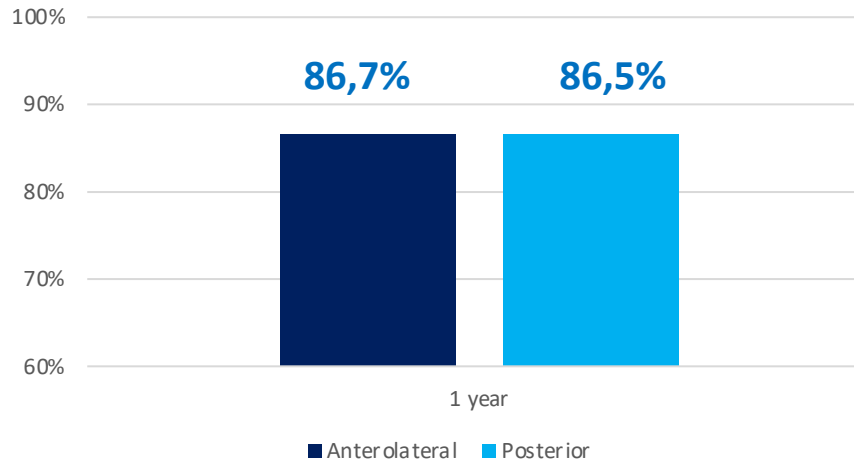
Mean improvement difference between posterior vs anterior groups at 1-year:

ODI:  $p = 0.028$  / EQ-5D  $p < 0.001$

# Fusion rates at 1-year FU

Anterolateral	Posterior	Total
N = 114	N = 117	N = 231
65/75	45/52	110/127

Proportion of CT  
assessment





# Conclusions

Anterior and posterior MI fusion techniques are both effective in improving pain, disability and QoL at 1-year FU in degenerative spondylolisthesis.

Slight superiority in ODI and EQ-5D with posterior fusion: eventual effect of direct versus indirect decompression

Similar fusion rates with both techniques