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Depressive symptoms in lung transplant recipients: trajectory and association with mortality

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Lung transplantation

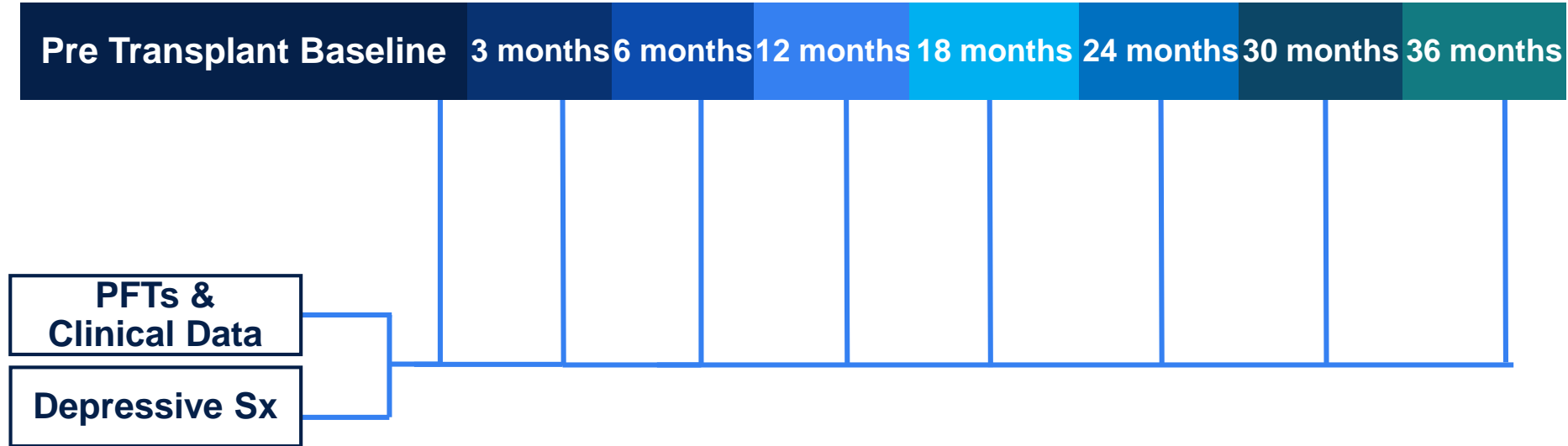
- There are two primary aims of lung transplantation
 - Extending survival
 - Improving Health-Related Quality of Life (HRQL)
- Depression is a threat to these aims



We sought to test the association between depressive symptoms and survival using a longitudinal cohort with 3-years of follow up, and to assess trajectory of changes in depressive symptoms after transplant

Breathe Again Study

- Single-center prospective cohort study of persons undergoing lung transplantation between 2010-2017 at University of California, San Francisco

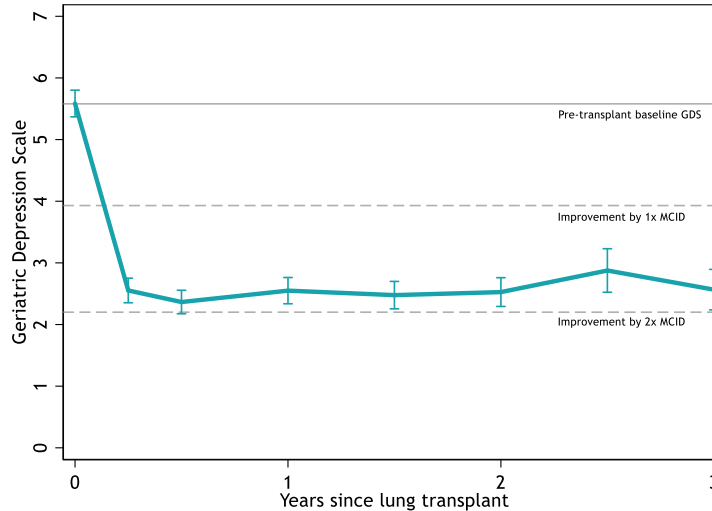


Depressive Symptoms

Instrument	Range	MCID	Categorical
Geriatric Depression Scale	0-15	1.65¶	No Depression: 0-4 Mild Depression: 5-8 Moderate Depression: 9-11 Severe Depression: 12-15

¶ ½ Standard Deviation used in lieu of established MCID

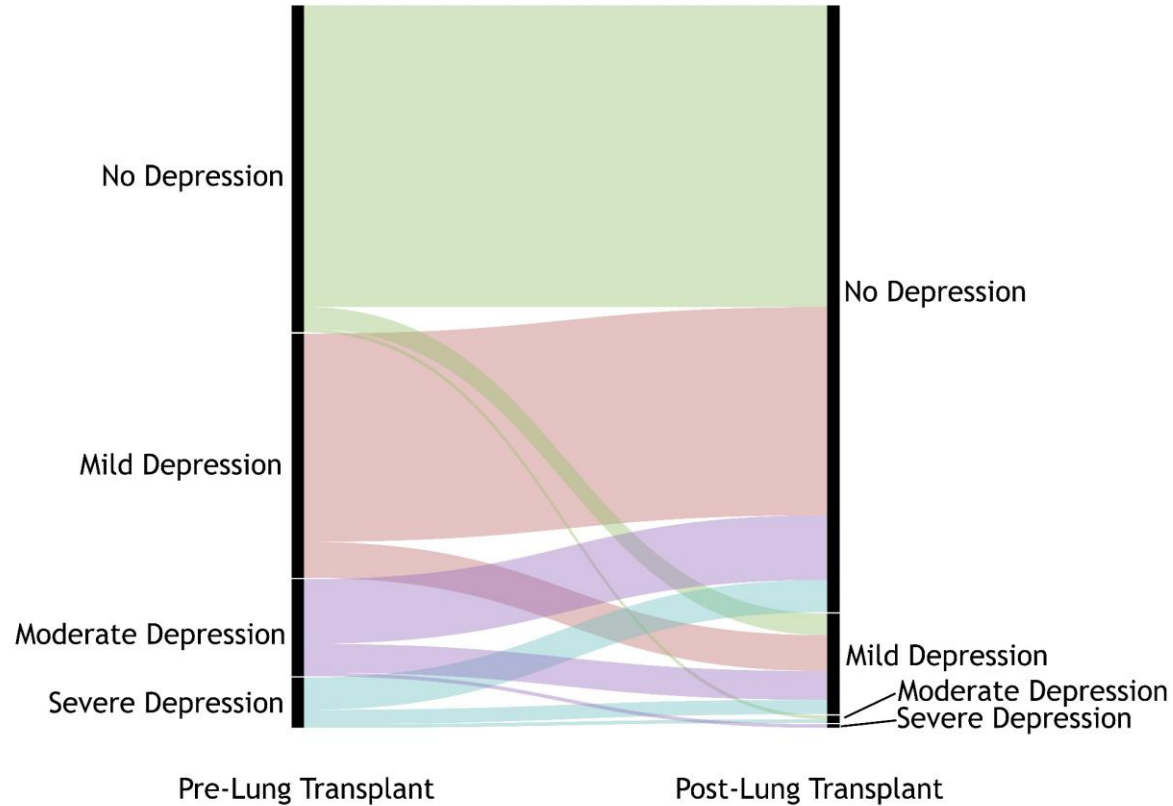
What happens to depressive symptoms after transplant?



Time period	Change in depressive symptoms (95% CI)
Pre-transplant baseline through six-months post-transplant	-3.13 (-3.48, -2.77)
Six-months post-transplant through three-years post-transplant	0.41 (0.18, 0.64)

Linear mixed effects models adjusted for age, gender, race, diagnosis, and pre-LT FEV1

What happens to depressive symptoms after transplant?



Are depressive symptoms associated with mortality?

Predictor	Adjustment	Hazard Ratio (95% CI)
Baseline GDS	Age, sex, race, diagnosis	HR 0.97 (0.83, 1.13), p=0.70
Post-lung transplant GDS*	Age, sex, race, diagnosis	HR 1.19 (1.04, 1.39), p=0.02
Post-lung transplant GDS*	Age, sex, race, diagnosis, post-transplant FEV1¶	HR 1.09 (0.92, 1.28), p=0.34

Cox proportional hazards models. Models scaled to a 1.65 point increase in GDS, which represents a change which is considered to be the minimally clinically important difference.

* Time dependent predictor

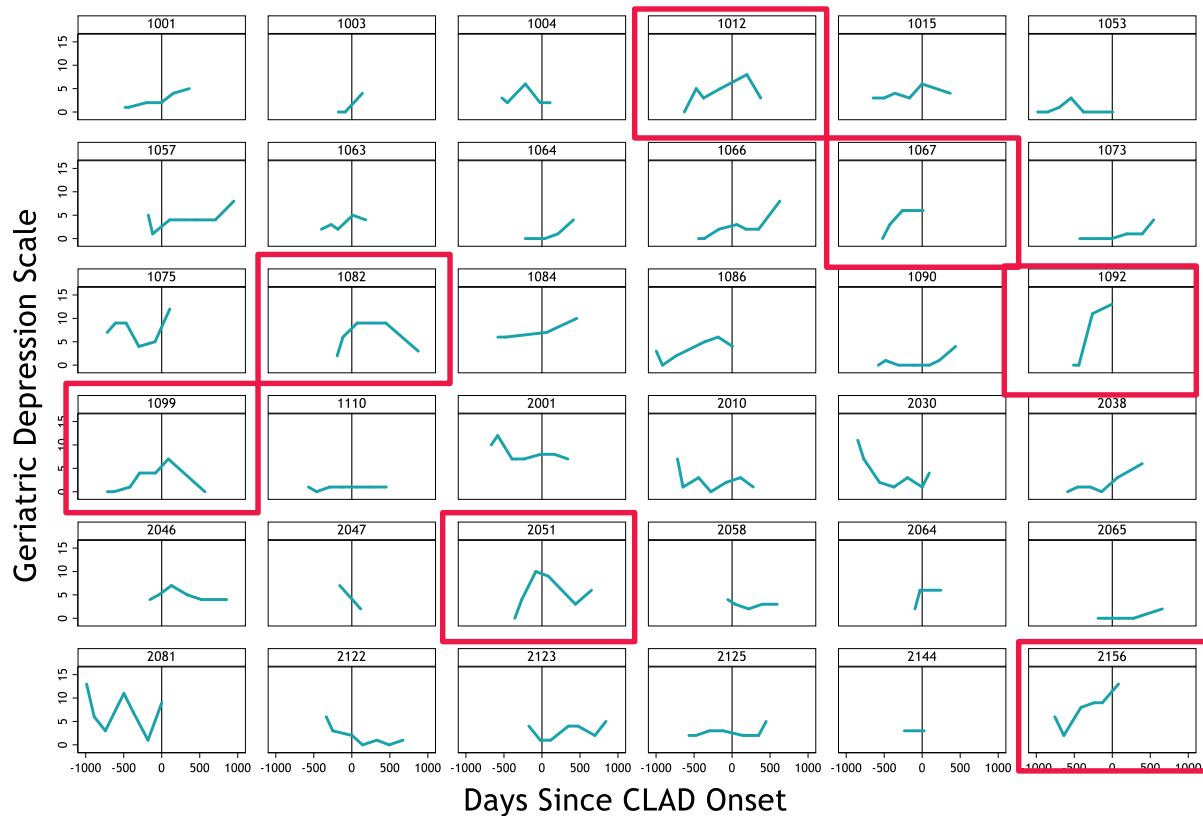
¶ Time dependent co-variate

Lung function drives depression? Or not?

Predictor	Outcome	Effect (95% CI)
FEV1 % at prior visit (10 % decrease)	GDS at subsequent visit	0.07 (-0.01, 0.015), p=0.10
GDS at prior visit (1.65 point increase)	FEV1 % predicted in subsequent visit	-0.95 (-1.55, -0.35), p<0.01

Linear mixed effects models adjusted for age, gender, race, diagnosis using lagged outcomes. Predictor from preceding study visit used to assess outcome at subsequent study visit

Lung function drives depression? Or not?



Conclusions

- Depressive symptoms generally improve early after transplant and stay stable thereafter
- Post-transplant depressive symptoms are associated with mortality, however, the association does not remain after adjusting for post-transplant FEV1
- Some patients have increasing depressive symptoms which precede graft loss

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