WHITE MATTER MARKERS FOR TREATMENT OUTCOMES IN MAJOR DEPRESSIVE DISORDER

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• Major depressive disorder (MDD) treatment shows variable outcomes in similar presentations by cognitive behavioral therapy (CBT) and antidepressant medications (ADM)1,3

• Past treatment selection biomarker studies using resting-state fMRI implicate differential subcortical connectivity to LA insula, left ventromedial PFC, and periaqueductal gray2, 4

• Structural changes might mediate these functional connectivity patterns

• Goal: ID WM treatment selection biomarkers for MDD treatment

CONCLUSIONS

• Identified differential WM integrity in WM tracts adjacent to the insula, SMA, and hippocampus in remitters and failures to CBT and ADM.

• Findings similar to resting functional connectivity (FC) studies.

• Combined FC and WM findings could better differentiate treatment naïve MDD and triage for individualized treatment.

• Furthers evidence for brain-based measures of differentiating MDD subtype compared to clinical measures.

• Suggests relationship between structural and functional connectivity in MDD.

METHODS

• Obtained Diffusion Weighted Imaging from 167 treatment naive MDD pts randomized to 12 weeks of CBT (n=35) or ADM (n=75).

• Subjects grouped into treatment success (HDRS17 score <7 at 12 weeks) and failure (HDRS score change <30%).

• Whole brain fractional anisotropy (FA) map calculated from using Fdt toolbox in FMRIB and TBSS for statistical comparison.

• WM changes correlated with HDRS score changes from 0 to 12 weeks for All, CBT, and ADM treatment groups (Fig 1).

• Voxel-wise 2x2 ANOVA: treatment (CBT/ADM) by outcome (success/failure) performed via AFNI 3dMVM toolbox (Fig 2).

REFERENCES


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