Supplementary Data

Supplementary Materials and Methods

Study dosing

The mean (standard deviation [SD]) risperidone dose at endpoint was 1.43 ($\pm$0.35) mg/day in nonresponders and 1.33 ($\pm$.43) mg/day in responders (defined as improvement $\geq$50% on the Young Mania Rating Scale scores). The mean (SD) divalproex dose at endpoint was 863.64 ($\pm$210.54) mg/day in nonresponders and 855.14 ($\pm$245.23) mg/day in responders. The mean serum valproic level at end point was 98 μg/mL, and 95% of patients achieved a therapeutic serum valproic level of >75 μg/mL by the 5th day. No titration of medications was allowed after day 7. One participant in the divalproex group received lorazepam as a rescue medication at a dose of 2 mg for severe agitation during the first week of the trial. The average dose of lamotrigine monotherapy among those who received this medication was 205 mg. The mean end point dose of the sample was 196.32$\pm$82.31 mg. Patients were dosed at 1.9$\pm$0.58 mg/lb, with no differences by responder status or age. Rescue medications used during the first 4-week upward titration of lamotrigine were as follows: risperidone 1.0$\pm$0.35 mg (n=10); aripiprazole 12.5$\pm$2.5 mg (n=8); quetiapine 340$\pm$52 mg (n=9); and ziprasidone 60$\pm$20 mg (n=6). None of the patients received these medications during the 8 week treatment trial on lamotrigine (Pavuluri et al., 2009a).

Component screening using the Artifact Index Value

A systematic process was used on the 40 independent components to identify those that would be retained for further analysis. First, components that were likely to represent signal artifacts were removed from consideration. To determine an index of the likelihood that each component was an artifact, correlations between each component's spatial map and a priori maps of gray matter (GM), white matter (WM), and cerebrospinal fluid (CSF) were calculated in Group ICA for functional magnetic resonance imaging Toolbox. Next, GM/WM and GM/CSF ratios were calculated for each component. These represent the relative overlap of each component with GM versus WM and GM versus CSF. Finally, these ratios were summed to produce an Artifact Index Value (AIV), with higher values representing a higher confidence that the component represented real, nonartifactual activity. Components whose AIV was less than or equal to the median AIV were deemed artifactual and were not examined further. Visual inspection of these 20 rejected components revealed that they largely reflected CSF, pulsatile motion at the base of the brain, WM tracts, and other nontask-related signals.