Reviewer's report

Title: Neurocognitive function in bipolar disorder: a comparison between bipolar I and II disorder and matched controls

Version: 2 Date: 20 March 2013

Reviewer: Ivan Torres

Reviewer's report:

Major Compulsory:

1. Regarding comorbidity, the authors indicate in the response letter that "A preliminary analysis does not suggest that either factor has significantly influenced the results, although co-morbid anxiety disorder and ADHD was more common in the bipolar type II group. For ADHD, several patients have missing information regarding diagnosis but it still appears unlikely that this factor has influenced the results. Neither factor was strongly correlated to any of the cognitive test variables analyzed in table 3." These data analyses showing that these comorbidities do not influence the test results (which were apparently conducted) should be included in the manuscript. If these analyses do not support the idea that effects of comorbidity can be ruled out, then this limitation should be stated in the discussion.

2. Were the regression analyses “stepwise” and if so, more details about the procedure are needed (e.g. forward selection, backward elimination, etc.). Alternatively, it appears that the regression techniques may have been standard multiple regression with simultaneous entry of independent variables. Please clarify.

Minor Essential:

1. The strengths and unique aspects of the study are now well described in the author’s response letter, but these points were not all integrated into the introduction in the manuscript, and they should be included:
   - Relatively large sample size
   - Validated diagnosis
   - Population based control group
   - Control for medication effects and residual symptoms
   - Relatively large cognitive test battery

2. With exclusion criteria of MADRS > 14 and YMRS > 14, it is still possible that some patients with mild but significant mood symptoms were allowed in the study. Thus, the sample should be described as “clinically stable” rather than euthymic.
3. The units of all the neuropsychological measures in Table 2 have not been fully clarified. Specifically, are the Claeson-Dahl measures demographics-corrected or raw scores? Are the various Rey Complex Figure Test scores in the table t-scores, raw scores, or a combination of these? The DKEFS scores appear to be scaled scores (mean 10, SD 3), and if so, this should be stated.

4. English proofreading is needed in some portions of the manuscript to make it more readable.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests.