Reviewer's report

Title: Cognitive function during short-term abstinence from opioid dependence: a comparison to age, gender, and verbal intelligence matched controls

Version: 1 Date: 26 September 2005

Reviewer: Tatia MC Lee

Reviewer's report:

General

This study examined cognitive function of subjects who used to be opioid dependent and were at their early stage of abstinence. This study is a commendable effort to understand the changes in cognitive functioning in people with opioid dependence, especially in the cognitive domains of working memory, executive function and fluid intelligence. The results were discussed in terms of the relationship between cognitive deficits and the elevation of stress system activation.

Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

1. It was not clear the rationale for the speculated relationships between days of withdrawal and cognitive performance. Furthermore, the authors may like to clarify the definition of “time-dependent neural responses” (p.5, paragraph 2) and how it was related to cognitive performance as hypothesized.

2. The rational for the choice of tests is unclear. Were they chosen because of their respectable psychometric properties? Or was it because of the constrain of testing time? The authors pointed out that the CFIT measures several different functions. Why wasn’t a test measuring a relatively more homogenous construct be adopted? The study attempted to understand the effect of short-term abstinence from opioid dependence on participants’ cognitive functioning, namely, working memory, fluid intelligence, memory and executive function. The authors may also like to elaborate on the relationship between the different cognitive constructs studied and their effect of short-term abstinence from opioid dependence.

3. The sequence of administration and hence the control for order effect of testing was not addressed. Furthermore, since short-term opioid withdrawal is one of the important independent variables in the current study, further elaboration on the Short Opiate Withdrawal Scale may help clarify the nature of withdrawal symptoms and their relationship with cognitive functions.

4. It is rather unclear why only verbal intelligence was matched for the clinical and control sample. Since the authors reported a group difference in fluid intelligence, the overall intelligence estimates are expected to be different (though the verbal intelligence estimated by the scores on the vocabulary subtest was matched). The unmatched education levels of the two groups further indicates that the baselines of the two groups may not be equivalent. The authors may consider re-analyzing the data by partialing out the confound variance introduced by non-equivalent intelligence estimates of the two groups.

5. Participants recruited were those admitted for potential methadone maintenance treatment. One of the criteria for admitting to the program was four years of documented opioid dependence. Seemingly, the length of period of opioid dependence of individual participants may vary, which may
become a confounding variable that affects their cognitive functioning.

6. For the clinical population, opioid was not the only drug of use. This makes it difficult to conclude that the identified cognitive profile was related to opioid use, but not the effect of the other substances of abuse. Furthermore, the performance of the participants on the cognitive assessments may be confounded by their lack of motivation to complete the tasks as a result of opioid craving during the short period (5-15 days) immediately after the cessation of opioid abuse.

7. The conclusion drawn from the findings is rather confusing. On p.10, the authors concluded that the results indicate a rather general cognitive deficits…, but in the conclusion (p.13), the authors concluded that there exists a general cognitive deficit.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)

8. What is the p-level after correction?

9. “Opiod” should be “Opioid”

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Discretionary Revisions (which the author can choose to ignore)

What next?: Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

Declaration of competing interests:

I declare that i have no competing interests