Reviewer’s report

Title: Pharmacologic cholinesterase inhibition improves survival in acetaminophen-induced acute liver failure in the mouse

Version: 1 Date: 11 February 2014

Reviewer: Mitchell Fink

Reviewer’s report:

Major Comments:
1. Although neostigmine pre-treatment prolonged survival, administration of this drug failed to change outcome. 100% of the animals died irrespective of whether or not they received neostigmine. The authors need to address this issue. Was their model too overwhelming? If so, additional studies using a model with lower mortality would be helpful. Was the dose of neostigmine inadequate? If so, additional, dose-response studies would strengthen the paper.
2. N-acetylcysteine (NAC) is the current "gold standard" approach for managing acetaminophen overdoses in patients. Thus, it is appropriate to ask whether survival can be improved adding neostigmine to a treatment regimen based on administration of NAC.

Minor Comment:
1. Neostigmine is a (reversible) acetylcholinesterase (not acetylcholine) inhibitor.

Level of interest: An article of importance in its field

Quality of written English: Acceptable

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