Reviewer's report

Title: Effects of Rituximab in Two Patients with Dysferlin-Deficient Muscular Dystrophy

Version: 1 Date: 20 January 2010

Reviewer: Alan Baer

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Major Compulsory Revisions

1. The authors do not indicate in the methods section that they apparently utilized the best strength exhibited by the right (presumably dominant) hand to define MVC% for a particular time point. Why was this done, as opposed to using the mean of right and left hand values? No mention is made as to whether the subjects were right- or left-handed. It is not stated as to whether the MVC for normal subjects was defined as the mean of the best performances for the dominant hand only, or whether the means for both the dominant and non-dominant hands were measured and then used individually to normalize the strength of the dominant and non-dominant hands of the patients. This methodology needs to be clarified.

2. In Figure 2, it would be best to utilize the same range of y-axis values for the two graphs pertaining to each subject. The range should also be more restricted. Thus for patient 1, the range could be 0-40% and for patient 2, the range could be 50-90%.

3. The authors state that the CK values were normal after the rituximab infusions. What were the CK values before the infusions? Did these values become normal with the infusions? If so, a graph of the CK values with treatment would be important.

4. The interpretation of the results with regard to patient #1 need to account for two discrepancies. First, the increase in right hand strength from ~11-14% during the year prior to the infusion to ~24% on the day of the first infusion is striking and challenges the validity of the measurement system. The authors state in their reply to my review that this was a placebo effect, but then it should have been evident as well in the left hand. Second, the authors state that this patient showed an increase in hand MVC% with rituximab infusions, but this was only evident in the right hand one week after the first infusion. This finding is in contrast to the maximal improvement in MVC% at 35 days following the initial infusion seen in patient #2. It is very doubtful that any meaningful biologic event (such as muscle regeneration) occurs as early as day 7 following the initial infusion that can lead to an improvement in muscle strength. If it reflects the elimination of an adverse cytokine effect on muscle, then one would expect that it would be sustained for at least several more weeks. On balance, it is very difficult for this observer to interpret the findings in patient #1 as positive.
Discretionary Revisions: None
Minor Essential Revisions: None

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

**Quality of written English:** Acceptable

**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'