Reviewer’s report

Title: Repeated measures study of weekly and daily cytomegalovirus shedding patterns in saliva and urine of healthy cytomegalovirus-seropositive children

Version: 1  Date: 28 June 2014

Reviewer: William Britt

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Manuscript: Repeated measures study of weekly and daily cytomegalovirus shedding patterns in saliva and urine of healthy cytomegalovirus seropositive children
Authors: Michael J. Cannon, et.al.

This very concise manuscript describes a study of cytomegalovirus (CMV) excretion in children selected for study based on serological reactivity (IgG) to CMV. The authors conclusions are likely valid albeit somewhat limited secondary to methodological problems with the study. The study itself mirrors data that has been available in various formats for over 40 years and although the authors are correct in suggesting few studies have carried out sampling as frequently as was done in this study, many of previous studies carried out sampling in more well characterized populations and for greater periods of time. Thus, other than demonstrating that frequent sampling of children if feasible for demonstrating excretion of CMV, this study adds very little to existing literature. In addition there are several flaws in the study itself along with uncertainty in the sensitivity of the assays employed as to limit any definitive interpretation of the data. Examples include:

1) No information was provided on the perinatal exposures to CMV of these children. Were they born to seropositive mothers? Breast fed and for how long? Were their sibs infected? It is well known that young infants who acquire CMV perinatally can excrete this virus for years and in some cases in amounts similar to infants with congenital CMV infections. Furthermore, were any of these infants congenitally infected?

2) The assays are not validated there is no true gold standard of virus excretion in this study to compare the results from the saliva assay or the urine assay. Obviously the urine assay is woefully poor in its sensitivity so comparison to detection of virus in the saliva is meaningless. Was the saliva PCR compared to any standard assay or to other saliva PCR assays?

3) Statements within the text such as the relationship of avidity of the IgG and shedding are wild speculation. Avidity assays have never been rigorously studied in young infants in terms of the impact of virus excretion. Secondly, is this maternal antibody or the infants’ antibodies?

There are many points that could be raised but the major problem with this manuscript is that is adds so little to existing literature. Even the citations
provided in the references appear to be heavily skewed towards reviews and not citations of primary studies.

**Level of interest:** An article of insufficient interest to warrant publication in a scientific/medical journal

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

no competing interests