

Session: P042 Evaluation of novel tests in clinical virology

**Category: 1g. Diagnostic virology (other than hepatitis & HIV)**

23 April 2017, 13:30 - 14:30  
P0912

## Urine compared with serum for diagnostic rt-PCR in an Asian Zika virus outbreak in Singapore in 2016

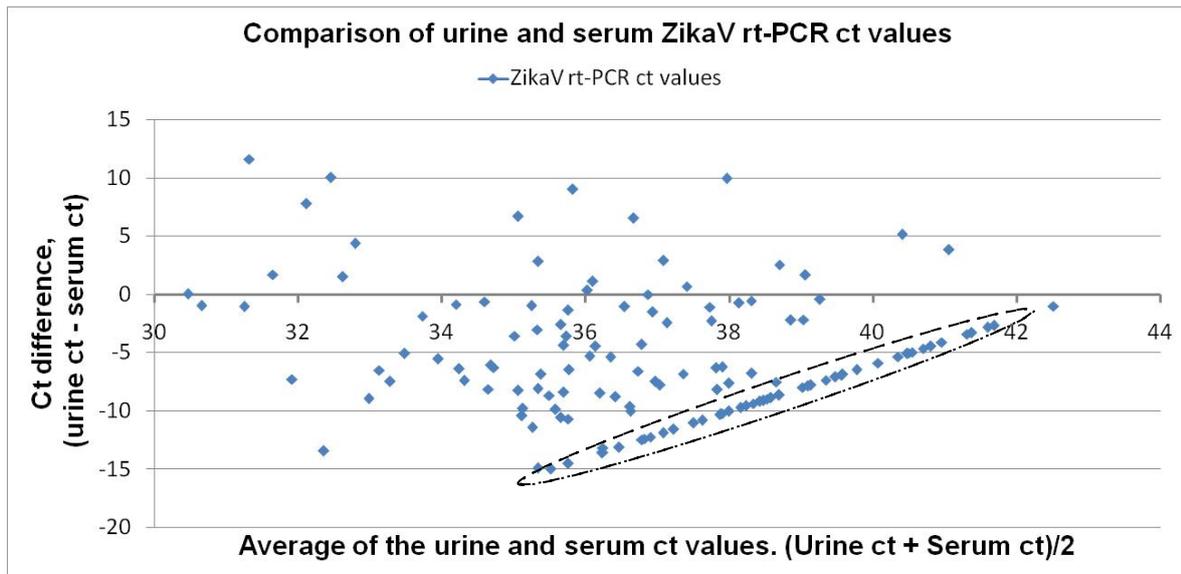
Janice Wai Yeng Leong<sup>1</sup>

<sup>1</sup>*Tan Tock Seng Hospital*

**Background:** An Asian ZikaVirus caused an outbreak in Singapore in August 2016. The literature suggested that the rt-PCR yield from urine might be better than serum. Suspect cases had both sample types tested. This report compares the yield from serum with urine for the detection of ZikaV.

**Material/methods:** A comparison of results, from pairs of urine and blood samples collected on the same day, was based on an audit of routine laboratory data at Tan Tock Seng Hospital, Singapore. ZikaV RNA was extracted with the EasyMag (Biomérieux) with 500uL input and 55uL eluate. The in use diagnostic rt-PCR was based on published primers/probes designed to detect ZikaV that caused an outbreak in Yap State, Micronesia, in 2007. Handling of both sample types was the same; samples were processed on an urgent 24 hour basis, 7 days /week. Ct values were plotted as the difference in ct (urine ct – serum ct) against the average ct ((urine ct + serum ct)/2).

**Results:** There were 135 paired samples; RNA was 'not detected' in 2 urine samples and 47 serum samples, so they were assigned ct values of 43 to allow a difference and mean to be calculated; this subset appears on the figure as a linear group, highlighted with an interrupted oval. Ct values are inversely related to the quantity of target, so values above the 'zero' line represent pairs where there was a higher RNA load in the serum sample. Values below the 'zero' line mean the RNA load was higher in the urine than in the serum. A ct difference of 3.3 translates approximately to a ten fold difference in RNA load.



**Conclusions:** Urine yielded a higher RNA load for the majority but in 22 of the 135 pairs the load was higher in the serum sample; in several sera the signal was over a thousand fold higher than the urine. This was unexpected as the literature suggests urine is preferable to blood, although data for Asians and Asian strains of ZikaV are not available. There are some data from pregnant women showing that serum may be a better sample in pregnancy but the data are limited. Initial analysis of our data does not reveal an association with age, renal function or day of illness; further explanations are being explored.