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## Virus hunting: A new variant of torque teno virus identified in Kawasaki disease

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**K**awasaki disease (KD) is an acute febrile illness which was first reported in 1967. KD affects children, mainly of 0-10 years. Without prompt treatment, KD damages the arteries in children's hearts, and can be potentially fatal. The number of KD has been increasing rapidly in Japan, as well as in many other countries. KD is possibly infectious, although its aetiology has been unknown. To explore the aetiological agent(s) of KD, we enrolled 11 patients of KD and 22 matched control children. The blood, faeces and nasopharyngeal aspirates were collected from these 33 children. The DNA/RNA in these samples were sequenced by a next generation high-throughput sequencer (Illumina®). Subsequently, Livermore Metagenomic Analysis Toolkit classified the DNA/RNA sequences into microbial species. It was revealed that the samples from 2 of the 11 KD patients contained large amounts of a new variant of torque teno virus (TTV). In contrast, none of the control samples contained this virus. TTV was first discovered by Nishizawa et al in 1997, but it is yet to be elucidated whether TTV

causes a human illness. Our small-scale study showed that TTV is a candidate for the aetiological agent(s) of KD. We also estimated the sample size for a future large-scale study, which would be necessary to determine the aetiology of KD. The estimated sample size was very large.

### Speaker Biography

Yoshiro Nagao earned BSc from University of Tokyo, MSc from London School of Hygiene and Tropical Medicine and MD & PhD from Osaka University. His clinical specialty is general internal medicine and pediatrics. He worked in Fukushima (2011-2013) after the nuclear disaster and served as Médecins Sans Frontières in South Sudan (2016). His research interest is epidemiology of infectious diseases (e.g. malaria and dengue hemorrhagic fever in Thailand and Indonesia) for which Cozzarelli Prize was awarded from the National Academy of Sciences of the US. He is currently working for Department of Pediatrics, Fukuoka Tokushukai Hospital.

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