

To the Editors:

## Varicella zoster virus as a cause of infectious encephalitis in a cohort of Sri Lankan patients

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Infectious encephalitis (IE) usually presents with an abrupt history of fever, headache, progressive decline of mental status with or without development of focal neurological symptoms and focal seizures [1]. Varicella-zoster virus (VZV) is one of the major causes of IE worldwide [2]. The primary infection manifests as chickenpox. It is capable of remaining dormant in the nerves to reactivate later causing neurological disorders including encephalitis [3]. There are reports of primary infection of VZV manifesting as encephalitis in immunocompetent children [4]. This study describes the VZV infection in a group of Sri Lankan patients with IE. Approval for the study was obtained from the Ethics Review Committee of the Institute.

Sixty seven cerebro-spinal fluid (CSF) samples of patients with fever, headache, vomiting, altered level of consciousness, seizures, focal neurologic deficits and altered behaviour were included in the study. Samples were received from government hospitals in Western, Central and Southern provinces of Sri Lanka from June 2015 to January 2016. The age of the patients varied from 12 days to 91 years (Median: 28 years). There were 30 (45%) females, 35% (51%) of males and 3 (4%) had no details regarding the gender. There were 31 (46%) in the paediatric age group (12 days to 14 years) and 36 (54%) adults (24 - 91 years).

Nucleic acids were extracted from 100 µl of each CSF sample, using the QIAamp MinElute Virus spin kit (Qiagen, Germany). Final elution was done with 50 µl of AVE buffer supplied by the manufacturer. Screening was done using a previously published Nested-Polymerase Chain Reaction (PCR) method, with slight modifications and as a singleplex assay [5]. For first PCR, 10 µl of extracted DNA was added to a total of 40 µl master mixture containing 312.5 nM each first-round (R1) primer, 1X Qiagen PCR buffer, 1.5 mM MgCl<sub>2</sub>, 200 µM dNTP, and 1.0 U *Taq* polymerase (Qiagen, Germany). Cycling conditions were 94°C for 5 min, followed by 35 cycles

of 94°C for 30 s, 56°C for 30 s, 72°C for 30 s and final extension at 72°C for 7 min. For second PCR, 4 µl of first-round product was transferred to 40 µl of a similar master mixture with second-round (R2) primers and same cycling conditions were used. Genomic DNA of VZV yielded a single second round PCR product of 99bp [5].

Six samples (three adults and three children) were positive for VZV. The overall prevalence of VZV was 9% (6/67) in the whole study group. The prevalence was 8.3% (3/36) among adults. Among the children it was 9.7% (3/31). Due to lack of medical history data, it was difficult to confirm whether it was the primary or secondary infection which manifested as encephalitis, especially among the paediatric patients. But according to previously published literature, even the primary infection may manifest as encephalitis [4]. Hence, more relevant studies with larger sample sizes and patient's medical history on previous VZV infections are necessary for further confirmation of these findings.

### Conflicts of interest

There are no conflicts of interest.

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