



APNES Meeting

Time: 2:00-4:10PM, September 29th, 2018

Venue: Rm 1110, Chang Yung Fa Foundation International Convention Center, Taipei, Taiwan

Attendees

Dr. Yong Poovorawan (University of Chulalongkorn, Thailand), Dr. Mong How Ooi (UNIMAS, Malaysia), Dr. Yoke-Fun Chan (Faculty of Medicine, University of Malaya, Malaysia), Dr. Veasna Duong (Institut Pasteur in Cambodia, Cambodia), Dr. Nguyen Thi Thanh Thao (Pasteur Institute of Ho Chi Minh City, Vietnam), Dr. Min-Shi Lee (NHRI, Taiwan), Ya-Yen Elisabeth Chen (NHRI, Taiwan), Dr. Wen-Chiung Chang (NHRI, Taiwan) and Dr. Fanglin Kuo (NHRI, Taiwan).

Chairperson (Min-Shi Lee) opening remarks

We are excited to welcome Dr. Yong Poovorawan (from University of Chulalongkorn) to the APNES team.

2018 enterovirus surveillance updates

Cambodia

By September, IP-Cambodia have tested 13 severe cases including 3 positives for EV and 0 for EV-A71. IP Cambodia has evaluated CODEHOP against duplex Real-time RT-PCR assay (EV-A71 and pan-EV). A total of 46 specimens were tested by CODEHOP and RT-PCR and the results showed that CODEHOP detected only 74% of the samples. Among 34 positive samples by CODEHOP, 88% were successfully sequenced. Of 26 samples with co-detection EV-A71 and EV by RT-PCR, 17 (81%) were positive by CODEHOP and the sequencing result from CODEHOP PCR products showed 10 sequences as EV-A71 and 7 sequences as other EVs. However, when specific EV-A71 sequencing primers were used to amplify the 26 samples positive by RT-PCR, the sequencing result showed that all 26 sequences were EV-A71.

	Real Time RT-PCR +	CODEHOP PCR+	CODEHOP Sequencing	CODEHOP EV-A71	CODEHOP EV	EV-A71 sequencing
EV alone	20	13 (65%)	13 (100%)	0	13	NA
Co-detection EV-A71 & EV	26	21 (81%)	17* (81%)	10	7	26 (100%)
Total	46	34 (74%)	30 (88%)	10	20	26 (100%)

* Sequences were weakly positive on gel



Malaysia

There is a nationwide EV71 outbreak in Malaysia this year. In the sample of Jan-July 2018 in the University of Malaya, the data were mostly from the outpatients of the University Hospital and some inpatients from private hospitals. Among the 82 samples, the PCR results have shown some CA16 and CA6 with a small number of EV-A71 (B5). Patient characteristics demonstrate that EV-A71 (7) cases are more likely to be hospitalized and 1 is fatal.

In UNIMAS Sarawak, through the specimens from Sibu Hospital up to September 25, there are 68 HFMD hospitalized cases in total. Among the cases, 16 were EV-A71 infected; 3 were CA6, and 1 was CB4.

Compared with the test results of University of Malaya, the EV positive rate is higher in Sarawak. Additionally, in Penang, a fatal case has been reported with the genotype EV-A71 (B5).

Taiwan

Based on Taiwan CDC surveillance report from week 1 to week 36, 2018, a total of 890 EV cases have been confirmed including 29 severe cases. Among the severe cases, 10 (34.5%) of them were ECHO11, 6 (6.9%) were EV-A71, and the rest were CA4, CA9, CA10, CA16, CB1, CB2, CB3, CB5 infections. A total of 8 deaths have been reported and all were related to ECHO11. Compared with the cumulative number in 2017 when 24 severe cases and 1 death were reported due to CB1, this year's severe and death cases were more likely to be caused by ECHO11.

Thailand

In Thailand, there is no EV outbreaks in 2018. One case with ECHO11 has been reported. There is no severe case in this year. Around 500 specimens with HFMD or Herpangina are examined in the Department of Pediatrics, Chulalongkorn university each year. The most prevalent EV type in 2018 is CA16, the second one is CA6, and followed by CA4 and CA10; a variety of CA8 is also found in cases with HFMD and Herpangina. In cases with herpangina, CA4 and CA10 are more likely to be found along with some echoviruses.

Over the past few years, there were more ECHO infections reported in hospitals, however, ECHO11 was not found. In 2017, the prevalent genotype is CB5; more than 30 cases had EV-A71 and a severe case was reported due to EV-A71.

Vietnam

PI-HCMC examined specimens of severe cases from hospitals in southern Vietnam. In 2018, the majority of EV infections are CA10 from patients with HFMD (while in 2017 were CA6). The presence of EV-A71 in the severe cases and the fatal cases were high (83%). EV71 was associated with the HFMD outbreak in southern Vietnam.



Lab protocol for EV detection and sequencing

Since primer costs of CODEHOP are more expensive than those of Pan-EV RT-PCR, some labs may conduct Pan-EV RT-PCR test first and do the CODEHOP for Pan-EV positive samples. During EV seasons, the Pan-EV positive rate could be higher than 50% and it is cost-effective to use CODEHOP as the primary test. For severe cases, it may need to conduct real-time RT-PCR to provide early diagnosis to clinicians.

Dr. Perera from UNIMAS is currently trying to ship the specimens in room temperature to Taiwan. If it works well with good quality, other labs will follow this approach to ship specimens in the future.

Class suspensions

Class suspensions in Taiwan mostly occur at the first week after new semester starts. In Malaysia, kindergartens have class suspensions during outbreak seasons. Classes or whole centers could be closed due to the outbreak situation. In Thailand, teachers assess every student's body temperature in the morning at the class entrance to monitor potential infections in Kindergartens. Schools in Vietnam also conduct body temperature assessment in outbreak seasons. NHRI is trying to develop DNA chips for rapid serotyping of enterovirus infections, which may reduce unnecessary class suspensions in the future.