WEEKLY EPIDEMIOLOGICAL REPORT

A publication of the Epidemiology Unit
Ministry of Health, Nutrition & Indigenous Medicine

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WER SRI LANKA 2016

International Conference on Dengue and Dengue Haemorrhage Fever 2016 -(Part III)

This is the last in the series of 3 articles on International Conference on Dengue and Dengue Haemorrhage Fever 2016.

SYMPOSIUM 3 – VACCINE AND VACCINE PROBLEMS

Prof. Annlies Wilder Smith and Dr. Ananda Amarasinghe co-chaired symposium 3 on Vaccines and Vaccine Problems.

Dr. Shibas Biswal, associate medical director at Takeda Vaccine in Singapore gave an overview on Takeda's Dengue Vaccine Candidate. Takeda's live attenuated tetravalent dengue vaccine candidate (TDV) contains a molecularly characterized dengue serotype 2 virus and three recombinant viruses expressing the pre membrane and envelope structural genes for serotype 1,3 and 4 in the dengue serotype 2 virus genetic backbone.

Then Dr. Murga Vadivale, senior director, Dengue Medical Affairs Asia Pacific, Sanofi Pasteur in Singapore spoke on CYD TDV Vaccine Candidate Development. He mentioned that dengue vaccine is urgently needed as part of the integrated dengue prevention and control strategies in dengue endemic countries including Sri Lanka. The most advanced candidate is a tetravalent, live attenuated recombinant dengue vaccine (CYD TDV) from Sanofi Pasteur. The CYD TDV vaccine candidate has recently been approved for prevention of dengue in individuals 9 to 45 years of age living in endemic areas in Mexico, the Philippines, Brazil, and El Salvador; while two other candidates are close to enter into phase 3 efficacy trials.

Dr. Asitha De Silva, Professor in pharmacology at the Faculty of Medicine, University of Kelaniya spoke on vaccine clinical trials. He mentioned that more than half of under-five child deaths are due to diseases that are preventable and treatable through simple, affordable interventions. For some of the most deadly childhood diseases, such as Measles, polio, diphtheria, vaccines are available and can protect children from illness and death. However other infectious diseases like dengue, for which there is no specific treatment, continue to cause significant childhood morbidity and mortality. He also mentioned that since vaccines have a preventive role, the target population for vaccine is primarily healthy children and infants and therefore most of the vaccine studies are conducted in children.

SYMPOSIUM 4 – CONTROL STRATEGIES/ NEW INTERVENTIONS IN DENGUE CONTROL

Prof. Scott O'Neill, Head of the "Eliminate Dengue" Research Program delivered his lecture on Wolbachia. Examining the potential use of inherited bacterial symbionts of insects known as 'Wolbanchia' is a novel method to interfere with arbovirus transmission. This work has now progressed from basic bench studies into open field trials in five countries.

Dr. Jacob Kumaresan and Prf. Duane J. Gubler were moderators of this session. It was a round

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table discussion with the participation of Prof. W. Abeyewickrame, Dr. Deepthi Perera, Dr. Kevin Goman, Dr. Rushika Perera and Prof. Scott O'Neill.

Prof. W. Abewickrama mentioned that their general objective is to established an operational model to control dengue in Sri Lanka using multiple vector control intervention, new product development, community engagement and optimal use of existing technologies and tools.

Dr. Rushika Perera told that the biochemical environment in the Aedes aegypti mid gut is significantly changed upon virus infection and their studies have shown that these changes are required for the virus to replicate and disseminate from the mid gut. Given the capability of these vectors to various ecological conditions and their vectorial capacity for several arboviruses, it is hypothesized that vector metabolism has a significant impact on disease transmission, vector competence and insecticide resistance, and presents a novel avenue that should be explored for intervention.

SYMPOSIUM 5 – PATHOGENESIS AND DIAGNOSIS

Prof. Suchithra Nimmantiya and Dr. Dharshan De Silva co-chaired symposium 5 on Pathogenesis and Diagnosis.

Prof. Anavaj Sakuntabhai, who heads an internationally recognized research laboratory at the *Institut Pasteur* spoke on Asymptomatic dengue infection. He mentioned that the main objective of the DENFREE project is focus on finding key factors determining dengue transmission and dynamics in order to develop new tools and strategies for controlling dengue transmission.

Dr. Neelika Malavige, Director of the Center for Dengue Research, University of Sri Jayawardanapura gave an account on pathogenesis of severe dengue. Endothelial dysfunction which leads to increased vascular permeability is the hallmark of severe dengue (SD). SD is commoner in secondary infections and it is presumed that both cross reactive T cells and antibodies could be contributing to SD due to an aberrant immune response to dengue response.

Dr. Yie -Hoe Lee from Singapore spoke on 'Are Cytokines Good Markers for Dengue Prognosis.' Prognosis of dengue remains a challenge in allowing early, objective triage of patients with dengue fevers of differing severity. Because molecular signaling seemingly proceeds gross morphological or observable clinical symptoms, the potential use of biochemical signals such as immune modulators (cytokines, chemokines and growth factors) for early prognosis of severe dengue is specially welcoming. Systemic reviews suggest patients with severe dengue have higher frequencies of IL 10 level. IFN gamma was another probable prognostic marker.

Prof. Shmala Devi Sekaran talked on Dengue Diagnostics. Due to the absence of pathognomonic clinical features that can distinguish Dengue from other febrile illnesses, laboratory confirmation is an essential part in the diagnosis process. Diagnosis today in many countries is still based on serology though the detection of NS1 has slowly become incorporated. Dengue diagnosis is not only important for clinical management of patients, but also for epidemiological surveillance, outbreak intervention and vaccine development and monitoring.

The conference was successfully concluded after the closing session with the participation of Prof. Duane Gubler, Prof Annelies Wilder Smith, Dr. Paba Palihawadana and Dr. HasithaTissera.

Compiled by Dr. S.W.A. Rajika of the Epidemiology Unit

Table 1: Selected notifiable diseases reported by Medical Officers of Health 16th – 22nd April 2016 (17th Week)

RDHS Division	Dengue Fever		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptospirosis		Typhus Fever		Viral Hepatitis		Human Rabies		Chickenpox		Meningitis		Leishmaniasis		WRCD	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	T*	C**
Colombo	161	5298	3	51	0	0	3	21	0	13	7	76	0	3	0	14	0	0	9	174	2	18	0	0	**81**	**100**
Gampaha	48	1876	0	30	0	4	1	12	0	5	6	119	0	6	0	14	0	0	6	165	0	18	0	3	**80**	**87**
Kalutara	54	1019	1	32	0	2	0	15	0	15	4	208	0	4	0	11	0	0	3	90	4	29	0	0	**79**	**100**
Kandy	21	694	7	46	0	9	0	9	1	18	2	61	4	32	0	30	0	0	2	54	0	19	0	6	**91**	**100**
Matale	1	140	1	11	0	1	0	8	0	2	1	46	0	10	0	12	0	1	0	16	1	39	0	13	**77**	**100**
NuwaraEliya	2	113	4	30	0	1	0	19	0	8	0	17	1	25	2	15	0	0	1	49	2	18	0	0	**100**	**100**
Galle	26	611	1	26	0	3	0	1	0	2	4	121	0	39	0	4	0	0	6	104	1	20	0	1	**90**	**100**
Hambantota	4	243	0	13	0	1	0	0	0	48	0	54	0	32	0	12	0	0	5	98	0	4	2	127	**83**	**92**
Matara	16	316	0	23	0	2	1	5	0	31	4	74	0	20	1	13	0	0	3	81	0	5	4	94	**100**	**100**
Jaffna	14	1147	4	87	0	2	1	41	2	26	0	7	4	494	0	4	0	0	0	96	0	15	0	1	**100**	**100**
Kilinochchi	0	41	0	16	0	0	0	19	0	3	0	8	0	18	0	0	0	0	1	3	1	5	0	0	**50**	**100**
Mannar	0	66	0	5	0	4	0	12	0	1	0	8	0	35	0	0	0	0	0	7	0	1	0	0	**80**	**80**
Vavuniya	4	127	0	4	0	0	1	8	2	13	1	11	0	7	2	5	0	0	0	16	0	1	0	2	**50**	**50**
Mullaitivu	5	82	0	8	0	0	0	11	0	4	0	18	1	5	0	0	0	0	0	1	0	4	0	4	**80**	**80**
Batticaloa	6	248	3	103	0	0	3	11	1	84	0	21	0	4	1	6	0	0	0	27	0	5	0	1	**57**	**100**
Ampara	0	71	0	9	0	0	0	0	0	13	0	18	0	0	0	6	0	0	0	34	0	0	0	4	**14**	**71**
Trincomalee	5	221	1	19	0	0	0	8	0	21	1	8	1	11	0	24	0	1	4	80	1	6	0	2	**67**	**83**
Kurunegala	11	572	0	74	1	7	0	1	0	6	2	65	1	8	0	15	0	2	7	111	0	19	2	36	**69**	**90**
Puttalam	9	487	0	19	0	1	0	3	0	0	1	24	0	54	0	0	0	0	1	33	3	17	0	0	**62**	**85**
Anuradhapura	7	224	1	27	0	1	0	2	0	20	6	147	1	15	0	10	0	0	10	92	0	15	3	70	**58**	**89**
Polonnaruwa	3	138	0	12	0	2	0	8	0	5	0	47	0	1	0	2	0	0	2	37	0	5	0	51	**86**	**86**
Badulla	3	206	5	34	0	7	0	3	0	5	0	55	2	32	1	57	0	0	2	68	2	76	0	0	**53**	**94**
Monaragala	4	133	1	17	0	1	0	2	4	9	3	126	0	43	1	71	0	1	2	30	1	13	0	10	**91**	**100**
Ratnapura	35	648	5	91	0	13	0	12	0	15	13	150	0	14	1	61	0	0	0	71	1	46	0	0	**67**	**83**
Kegalle	19	471	1	17	0	10	0	15	0	22	3	75	0	9	0	10	0	0	5	143	2	18	0	0	**73**	**100**
Kalmune	5	310	1	28	0	3	0	3	0	8	0	8	0	0	0	2	0	4	0	35	0	8	0	0	**54**	**85**
SRILANKA	**463**	**15502**	**39**	**832**	**1**	**74**	**10**	**249**	**10**	**397**	**58**	**1572**	**15**	**921**	**9**	**398**	**0**	**9**	**69**	**1715**	**21**	**424**	**11**	**425**	**75**	**93**

Source: Weekly Returns of Communicable Diseases (WRCD).

*T=Timeliness refers to returns received on or before 22nd April, 2016 Total number of reporting units 339 Number of reporting units data provided for the current week: 319 C**-Completeness

A = Cases reported during the current week. **B** = Cumulative cases for the year.

Table 2: Vaccine-Preventable Diseases & AFP

16th – 22nd April 2016 (17th Week)

Disease	No. of Cases by Province									Number of cases during current week in 2016	Number of cases during same week in 2015	Total number of cases to date in 2016	Total number of cases to date in 2015	Difference between the number of cases to date in 20156& 2015
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	00	00	00	00	00	00	00	00	00	00	00	17	22	-23.1%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Mumps	01	00	01	00	00	00	01	01	01	05	03	134	123	+9.1%
Measles	02	01	00	01	00	01	00	00	01	06	65	234	725	-67.1%
Rubella	00	00	00	00	00	00	00	00	00	00	00	06	05	+20%
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Tetanus	00	00	00	00	00	00	00	00	00	00	00	02	04	-50%
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Japanese Encephalitis	00	00	00	00	00	00	00	00	00	00	00	00	07	-100%
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	25	30	-16.6%
Tuberculosis	77	19	19	10	13	09	00	14	01	162	385	2971	3201	-7.1%

Key to Table 1 & 2

Provinces: **W**: Western, **C**: Central, **S**: Southern, **N**: North, **E**: East, **NC**: North Central, **NW**: North Western, **U**: Uva, **Sab**: Sabaragamuwa.

RDHS Divisions: **CB**: Colombo, **GM**: Gampaha, **KL**: Kalutara, **KD**: Kandy, **ML**: Matale, **NE**: Nuwara Eliya, **GL**: Galle, **HB**: Hambantota, **MT**: Matara, **JF**: Jaffna, **KN**: Killinochchi, **MN**: Mannar, **VA**: Vavuniya, **MU**: Mullaitivu, **BT**: Batticaloa, **AM**: Ampara, **TR**: Trincomalee, **KM**: Kalmunai, **KR**: Kurunegala, **PU**: Puttalam, **AP**: Anuradhapura, **PO**: Polonnaruwa, **BD**: Badulla, **MO**: Moneragala, **RP**: Ratnapura, **KG**: Kegalle.

Data Sources:

Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Neonatal Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps., Rubella, CRS,

Special Surveillance: AFP* (Acute Flaccid Paralysis), Japanese Encephalitis

CRS** =Congenital Rubella Syndrome

AFP and all clinically confirmed Vaccine Preventable Diseases except Tuberculosis and Mumps should be investigated by the MOH

Dengue Prevention and Control Health Messages

Look for plants such as bamboo, bohemia, rampe and banana in your surroundings and maintain them

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Comments and contributions for publication in the WER Sri Lanka are welcome. However, the editor reserves the right to accept or reject items for publication. All correspondence should be mailed to The Editor, WER Sri Lanka, Epidemiological Unit, P.O. Box 1567, Colombo or sent by E-mail to **chepid@sltnet.lk. Prior approval should be obtained from the Epidemiology Unit before publishing data in this publication**

ON STATE SERVICE

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