WEEKLY EPIDEMIOLOGICAL REPORT
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Prolonged Travel and Blood Clots: Initial Results

World Health Organization (WHO) has released results from Phase I of the WHO Research Into Global Hazards of Travel (WRIGHT) project. Findings indicate that the risk of developing venous thromboembolism (VTE) approximately doubles after travel lasting four hours or more. However, the study points out that even with this increased risk, the absolute risk of developing VTE, if seated and immobile for more than four hours, remains relatively low at about 1 in 6000.

The two most common manifestations of VTE are deep vein thrombosis and pulmonary embolism. Deep vein thrombosis (DVT) is a condition in which a blood clot, or thrombus, develops in a deep vein - usually in the lower leg. Symptoms of DVT are principally pain, tenderness and swelling of the affected part. DVT can be detected through medical testing and can be treated. It can be life-threatening when associated with thromboembolism.

Thromboembolism occurs when a blood clot (from a deep vein thrombosis) in a leg vein breaks off and travels through the body to the lungs where it becomes lodged and blocks blood flow. This is known as pulmonary embolism, and symptoms include chest pain and breathing difficulties. VTE can be treated, but if it is not, it can lead to death.

The study had shown that plane, train or other automobile passengers are at higher risk of VTE when they remain seated and immobile on journeys of more than four hours. This is due to a stagnation of blood in the veins caused by prolonged immobility, which can promote blood clot formation in veins.

One study within the project examining flights in particular found that those taking multiple flights over a short period of time are also at higher risk. This is because the risk of VTE does not go away completely after a journey is over, and the risk remains elevated for about four weeks

Other factors of influence

The report shows that a number of other factors increase the risk of VTE during travel, including obesity, being very tall or very short (taller than 1.9 meters or shorter than 1.6 meters), use of oral contraceptives, and inherited blood disorders leading to increased clotting tendency.

According to the WHO, the study does confirm that there is an increased risk of venous thromboembolism during travel where the passenger is seated and immobile for over four hours, whether in a plane, train, bus or car. However, it has been pointed out that the risk of developing VTE when travelling remains relatively low.

This study has not investigated effective preventive measures against DVT and VTE. However, experts recognize that blood circulation can be promoted by exercising the calf muscles with up-and-down movements of the feet at the ankle joints. Moving feet in this manner encourages blood flow in the calf muscle veins, thus reducing blood stagnation. People should also avoid wearing tight clothing during travel, as they promote blood stagnation.

Contents ***Page***

Phase I of the research project concludes that there is a need for travellers to be given appropriate information regarding the risk of VTE by transport authorities, airlines, and medical professionals. Further studies will be necessary to identify effective preventive measures. This will comprise Phase II of the project, which requires additional funding before it can begin. Individuals with questions regarding prevention of VTE should consult their physicians before travelling.

Background of WRIGHT project

In 2000, media and public attention was focused on the risk of thrombosis in long-haul travellers, following the death from pulmonary embolism of a young English woman who returned on a long-haul flight from Australia. In the same year, a report from the Select Committee on Science and Technology of the United Kingdom House of Lords recommended research into the risk of DVT. Following a consultation of experts convened by WHO in March 2001, the WRIGHT project was initiated. Phase 1 was funded by the UK Government and the European Commission.

The objectives of Phase I were to confirm whether the risk of VTE is increased by air travel and to determine the magnitude of risk.

The studies were conducted under the auspices of WHO and performed by an international collaboration of researchers from the Universities of Leiden, Amsterdam, Leicester, Newcastle, Aberdeen and Lausanne. There were five studies:

- a population-based case control study to investigate the risk factors of VTE;
- two retrospective cohort studies among employees of international organizations and Dutch commercial pilots to investigate the actual risk of VTE related to air travel; and
- two pathophysiological studies to investigate the influence of immobility on VTE related to travel and the influence, if any, of low oxygen and low pressure in the cabin of aircraft on VTE related to travel.

Salmonella Food Poisoning at Ragama

Three cases of severe diarrhea , vomiting, fever and abdominal pain, including one death, in the same family were reported from the North Colombo Teaching Hospital, Ragama on 5th June, 2007 to the Epidemiology Unit. Prompt investigations were carried out by the Medical Officer of Health, Ragama and Regional Epidemiologist, Gampaha with their public health staff under the guidance of the DPDHS, Gampaha. Stool samples sent to the MRI and the Faculty of Medicine, Ragama microbiology department had confirmed the presence of 'salmonella'. Separate reports in this regard have been sent to the Epidemiology Unit by the RE and MOH. The Epidemiology Unit wishes to commend MOH, RE and others for the prompt action, reporting and use of laboratory support to establish a clear clinical diagnosis.

Cardio-Vascular Diseases (CVD):

Facts at a Glance

CVD is the name given for the group of disorders of the heart and blood vessels, and include

- Hypertension (high blood pressure)
- Coronary heart disease (heart attack)
- Cerebrovascular disease (stroke)
- Peripheral vascular disease
- Heart failure
- Rheumatic heart disease
- Congenital heart disease and
- Cardiomyopathies.

Facts

- In 1999 CVD contributed to a third of global deaths.
- In 1999, low and middle income countries contributed to 78% of CVD deaths.
- By 2010 CVD is estimated to be the leading cause of death in developing countries.
- Heart disease has no geographic, gender or socio-economic boundaries.

CVD in developing countries

Economic transition, urbanisation, industrialisation and globalisation bring about lifestyle changes that promote heart disease. These risk factors include tobacco use, physical inactivity and unhealthy diet. Life expectancy in developing countries is rising sharply and people are exposed to these risk factors for longer periods. Newly merging CVD risk factors like low birth weight, folate deficiency and infections are also more frequent among the poorest in low and middle income countries.

Social and economic consequences

Clinical care of CVD is costly and prolonged. These direct costs divert the scarce family and societal resources to medical care. CVD affects individuals in their peak mid life years disrupting the future of the families dependent on them and undermining the development of nations by depriving valuable human resources in their most productive years. In developed countries lower socioeconomic groups have greater prevalence of risk factors, higher incidence of disease and higher mortality. In developing countries as the CVD epidemic matures the burden will shift to the lower socioeconomic groups.

Goal of the WHO Global Strategy

The aim of the WHO global strategy is to effectively control CVD risk factors and to reduce the burden of the fast growing CVD epidemic particularly in developing countries.

Source: *Website of the WHO (http://who.int/)*

Table 1: Vaccine-preventable Diseases & AFP

9th - 15th June 2007 (24th Week)

Disease	No. of Cases by Province								Number of cases during current week in 2007	Number of cases during same week in 2006	Total number of cases to date in 2007	Total number of cases to date in 2006	Difference between the number of cases to date between 2007 & 2006
	W	C	S	NE	NW	NC	U	Sab					
Acute Flaccid Paralysis	00	00	01 MT=1	00	00	00	01 BD=1	00	02	02	42	60	-30.0%
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00.0%
Measles	00	01 ML=1	00	00	00	00	00	00	01	00	36	15	+140.0%
Tetanus	00	01 NE=1	00	01 KM=1	00	00	00	00	02	01	17	31	-45.2%
Whooping Cough	01 KL=1	00	00	00	00	00	00	00	01	02	19	47	-59.6%
Tuberculosis	93	22	11	04	23	04	06	00	163	207	4707	4907	-4.1%

Table 2: Diseases under Special Surveillance

9th - 15th June 2007 (24th Week)

Disease	No. of Cases by Province								Number of cases during current week in 2007	Number of cases during same week in 2006	Total number of cases to date in 2007	Total number of cases to date in 2006	Difference between the number of cases to date between 2007 & 2006
	W	C	S	NE	NW	NC	U	Sab					
DF/DHF*	42	11	04	03	16	08	00	11	95	148	2160	4434	-51.3%
Encephalitis	01 CB=1	01 ML=1	02 MT=2	01 TR=1	02 KR=1 PU=1	00	00	01 KG=1	08	05	110	67	+64.2%
Human Rabies	00	00	00	00	00	00	00	01 RP=1	01	00	30	29	+3.4%

Table 3: Newly Introduced Notifiable Diseases

9th - 15th June 2007 (24th Week)

Disease	No. of Cases by Province								Number of cases during current week in 2007	Total number of cases to date in 2007
	W	C	S	NE	NW	NC	U	Sab		
Chickenpox	23	02	08	00	06	00	04	16	59	1739
Meningitis	03 GM=2 KL=1	00	01 MT=1	00	06 KR=2 PU=4	03 PO=3	01 BD=1	04 RP=1 KG=3	18	81
Mumps	13	02	01	18	03	00	01	08	46	689

*DF / DHF refers to Dengue Fever / Dengue Haemorrhagic Fever.
NA= Not Available.

Sources:

Weekly Return of Communicable Diseases:
Diphtheria, Measles, Tetanus, Whooping Cough, Human Rabies, Dengue Haemorrhagic Fever, Japanese Encephalitis, Chickenpox, Meningitis, Mumps.

Special Surveillance:
Acute Flaccid Paralysis.

National Control Program for Tuberculosis and Chest Diseases:
Tuberculosis.

Details by districts are given in Table 5.

Provinces: W=Western, C=Central, S=Southern, NE=North & East, NC=North Central, NW=North Western, U=Uva, Sab=Sabaragamuwa.
DPDHS 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.

Table 4: Laboratory Surveillance of Dengue Fever

9th - 15th June 2007 (24th Week)

Samples	Number tested	Number positive *	Serotypes				
			D_1	D_2	D_3	D_4	Negative
Number for current week	07	00	00	00	00	00	00
Total number to date in 2007	300	18	00	08	04	00	05

Source: Genetech Molecular Diagnostics & School of Gene Technology, Colombo. * Not all positives are subjected to serotyping.

Table 5: Selected notifiable diseases reported by Medical Officers of Health
9th - 15th June 2007 (24th Week)

DPDHS Division	Dengue Fever / DHF*		Dysentery		Encephalitis		Enteric Fever		Food Poisoning		Leptos-pirosis		Typhus Fever		Viral Hepatitis		Returns Re-ceived Timely**
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	%
Colombo	28	577	21	181	01	05	01	37	00	43	02	63	00	01	10	46	**100**
Gampaha	10	240	15	168	00	14	00	35	00	28	01	126	00	08	02	55	**71**
Kalutara	04	149	20	243	00	01	01	30	00	16	00	61	00	01	00	31	**100**
Kandy	09	228	06	144	00	03	03	36	00	07	02	41	00	39	54	1083	**77**
Matale	02	58	02	101	01	05	01	09	00	03	03	22	00	03	04	82	**83**
Nuwara Eliya	00	26	05	145	00	01	02	68	00	366	00	08	01	26	15	186	**71**
Galle	01	50	03	77	00	07	00	08	00	03	00	30	00	18	00	13	**81**
Hambantota	02	28	01	35	00	05	01	16	04	13	00	30	02	25	01	09	**82**
Matara	01	77	06	146	02	07	00	23	00	10	03	108	02	119	02	17	**94**
Jaffna	00	16	00	70	00	02	00	288	00	02	00	00	00	80	00	14	**00**
Kilinochchi	00	01	00	00	00	00	00	03	00	00	00	00	00	02	00	02	**00**
Mannar	00	07	00	11	00	00	00	38	00	00	00	00	00	00	00	05	**75**
Vavuniya	00	10	04	27	00	04	01	11	02	15	00	02	00	00	01	05	**100**
Mullaitivu	00	03	00	09	00	06	00	14	00	00	00	00	00	00	00	00	**40**
Batticaloa	00	58	03	316	00	08	00	14	00	10	00	00	00	22	28	365	**73**
Ampara	01	02	00	51	00	00	00	03	00	00	00	00	00	00	00	15	**29**
Trincomalee	02	40	02	117	01	02	01	13	00	23	01	04	00	03	02	57	**78**
Kurunegala	14	188	19	230	01	02	03	37	00	12	00	14	00	25	02	26	**78**
Puttalam	02	74	06	56	01	10	02	42	00	03	01	15	01	04	03	60	**89**
Anuradhapura	07	55	05	52	00	07	00	17	02	13	02	16	00	17	01	28	**74**
Polonnaruwa	01	34	03	49	00	02	01	05	00	01	00	16	00	00	02	13	**86**
Badulla	00	18	15	307	00	00	05	53	00	08	01	24	08	78	15	139	**80**
Monaragala	00	10	14	171	00	02	06	33	00	10	00	30	01	33	05	19	**100**
Ratnapura	03	103	06	300	00	10	01	36	00	08	03	32	01	10	01	40	**75**
Kegalle	08	105	06	152	01	06	01	26	00	04	04	54	00	13	06	57	**91**
Kalmunai	00	03	04	85	00	01	00	06	00	00	00	00	00	02	03	82	**62**
SRI LANKA	**95**	**2160**	**166**	**3243**	**08**	**110**	**30**	**901**	**08**	**598**	**23**	**698**	**16**	**529**	**157**	**2449**	**77**

Source: Weekly Returns of Communicable Diseases (WRCD).
***Dengue Fever / DHF** refers to Dengue Fever / Dengue Haemorrhagic Fever.
****Timely** refers to returns received on or before 23 June 2007. Total number of reporting units = 290. Number of reporting units data provided for the current week: 224
A = Cases reported during the current week. **B** = Cumulative cases for the year.

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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.

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