Conference of the International Society of Travel Medicine

Conference Review

Making Education Easy

12th CISTM, May 2011, Boston, USA

In this review:

Welcome

to this review of the 12th Conference of the International Society of Travel Medicine (CISTM) held in Boston May 8–12, 2011.

This review has been created to allow those unable to attend, but with a keen professional interest in Travel Medicine, to access a summary of some of the presentations. The conference was well organised and the quality of the presentations was uniformly high. I have highlighted some of the sessions I attended, but unfortunately there were often several interesting sessions running concurrently, and I could only be in one place at a time. Important sessions regarding vehicle injuries and sex and drug use during travel reviewed the knowledge base on these topics but didn't really add new data, so I haven't included them.

Abstracts for the Plenary and Symposium presentations can be found at http://tinyurl.com/12CISTM-IS. Free Communications abstracts can be found at http://tinyurl.com/12CISTM-FC.

Kind regards,

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Emerging economies: changes in travel patterns and differences for pre-travel

Presenters: Lim PL et al

Summary/comment: A frequently mentioned observation is that traditional travel medicine has focused on the preparation of travellers from developed or high income countries to developing or low income countries, but that this paradigm no longer applies. Now much travel is from and within emerging economies. A plenary addressed this issue and highlighted the growth of travel in regions such as Asia and Latin America. Increasing wealth (Asia's millionaires now match Europe's, and the GDP of India, China, Malaysia, Singapore, Indonesia and Vietnam have been increasing by 5–10% annually), increased leisure time (and acceptance of the concept of leisure in China) and easing of travel restrictions and political barriers all allow this. Travellers are not just tourists attracted to shops, casinos (in 2006, Macau overtook Las Vegas, and Singapore soon will) and theme parks (Hong Kong Disney had 4.5 million visitors in 2008, 59% from Mainland China). They are also business travellers (bilateral trade networks between countries in Asia, Africa, South America and the Middle East are increasing), guest workers of many varieties (e.g. 1.5 million Filipinos work overseas), medical tourists (at some Chinese organ transplant centres, 50% of the recipients are foreigners), relief workers and students (1.3 million Chinese students are currently abroad). Such populations may not be aware of the need to seek pretravel advice, and certainly travel medicine capacity needs to be increased in such regions.

Plenary; PL 04.01–03

About Conference Reviews

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Dengue: into the future

Presenters: Wilder-Smith A et al

Summary/comment: Another plenary and several studies were devoted to dengue. Globally, dengue numbers have grown significantly over the past 2 decades, and its geographic spread has widened considerably. Nine countries, including Nepal and Bhutan, reported dengue for the first time last year, and cases are increasingly being recognised in Africa. Rates among travellers are hard to define, but among GeoSentinel travellers returning from SE Asia, it is the most common cause of fever. Urbanisation is an important driving force for the expansion of dengue. *Aedes aegypti*, the chief vector of dengue, thrives in the water that slums and cities abound with.

It is important to realise that rash occurs in only 50% of those with dengue. The clinical classification of dengue has been recently revised by the WHO. There are now three categories: dengue, dengue with worrying signs (abdominal pain, persistent vomiting, clinical fluid accumulation, lethargy or restlessness and mucosal bleeding) and severe dengue. Those with severe dengue may have severe plasma leakage, severe haemorrhage or severe organ impairment. The critical phase for a patient with dengue is from days 3–6. As well as clinical monitoring, haematocrit and platelet counts should also be followed.

Asymptomatic dengue or nonspecific symptoms are far more common than classical dengue fever. The key risk factor for severe dengue is sequential infection. People have complete immunity to one strain of dengue after an infection, but if they are infected with one of the other three strains they have enhanced severity. Hence sequential administration of a monovalent vaccine would not be safe. The Holy Grail for dengue vaccines is one that provides complete immunity against all four serotypes and provides long-term protection. Research into dengue vaccines has been going for 40 years, and there are currently many vaccine candidates. Several live attenuated vaccines are being developed, and one has reached phase 3 trials in Australia. Subunit, inactivated and DNA vaccines are also being developed, but none are beyond phase 1. The target population for any vaccine will be children in endemic areas.

Plenary; PL02.01–03

Incidence of dengue virus infection in Australian travellers visiting South and South East Asia

Authors: Ratnam I et al

Summary: A prospective study from Melbourne performed between August 2007 and February 2010 with 387 travellers found dengue seroconversion among four (1.2%). One had visited China and three India. All were subclinical. The incidence was 3.4 dengue virus infections per 10,000 days of travel. Twenty travellers (4%) had positive dengue IgG prior to travel indicating past exposure and giving an overall seroprevalence of 5.2%.

Comment: A similar study was done among travellers from Boston. 3.4% of susceptible travellers seroconverted during travel, and again quite a number of travellers had pre-existing antibodies making them potentially at risk of having a second attack.

Free Communications – Oral Sessions; FC05.01

About Research Review

Research Review is an independent medical publishing organisation producing electronic journals in several specialist areas. These journals provide summaries of the 'must see' studies from the most respected medical journals in the world together with a local specialist commentary indicating why they matter. Research Review publications are intended for New Zealand medical professionals.

The immunogenicity of a modified intradermal pre-exposure rabies vaccination schedule – a case series of 420 travellers

Authors: Mills D et al

Summary: 420 travellers who did not have time to complete a standard pretravel rabies series received a modified intradermal series of two intradermal injections of 0.1mL of human diploid cell rabies vaccine administered on days 0 and 7. All had serology performed to check immune status at day 21–28. 397 travellers developed antibody levels of >0.5 IU/mL (94.3%). Antibody levels were significantly lower in the older age groups.

Comment: So often travellers present too late to do three doses of rabies vaccine over 21–28 days, so this is a welcome study. The presenters felt that this approach can be done in those aged <50 years, provided the traveller can be contacted with their result if they depart before it is available. Those who fail to seroconvert would have to seek a further dose while travelling.

Free Communications; FC07.03

For more information, please go to http://www.medsafe.govt.nz/

The immunocompromised traveller

Presenters: Kotton CN et al

Summary/comment: We need to remember that there is a broad spectrum of immunocompromise, and even among patients on the same immunosuppressive medication, effects can vary widely. When seeing an immunosuppressed patient, we need to consider their 'net state of immunosuppression'. Many factors, such as the patient's underlying disease state, the type, dose and duration of immunosuppressive therapy, the quality of graft function, comorbidities and recent or active infections, such as CMV, can all affect immune function. There is a useful categorisation of immunosuppression in the CDC Yellow Book available at www.cdc.gov/travel.

It is important to use an online interaction checker when prescribing to such patients, as there is a very real risk of drug interactions with drugs such as cyclosporine and tacrolimus, which may precipitate rejection or cause harm. We should warn such patients to be very careful what they are prescribed while away.

Regarding vaccination in immunosuppressed patients, the speaker said *"at the end of the day, these are judgement calls"*. General rules are that there is a poorer response, shorter duration of protection and, in the case of live vaccines, a higher risk of adverse events. When possible, we should check serology to see if there has been a response.

Plenary; PL03.01–03

Highlights from the New Editions

Presenter: Poumerol G et al

Summary: Yellow fever maps have been changed, and those of CDC and WHO harmonised. A review of the data about yellow fever epidemiology has been undertaken, and as a result, the maps now show three categories: areas where yellow fever vaccination is recommended; generally not recommended; and not recommended.

Comment: Significantly Tanzania, Eritrea, Somalia and parts of Zambia, Kenya, Argentina, Ecuador and Colombia are in the new category.

Special Update

Delayed antibody response to yellow fever vaccination in elderly coincides with prolonged viraemia

Authors: Roukens AH et al

Summary: This study from the Netherlands showed that yellow fever vaccine recipients over 60 years of age had higher rates of viraemia that lasted longer after vaccination than recipients aged 18–40 years. 77% of the younger patients had developed protective antibodies by day 10, but only 50% of the older patients had. By day 28, the antibody curves had converged.

Comment: A previous study had shown rates of seroconversion to be similar in elderly and younger patients at 28 days. However, this study looked at earlier timepoints and showed clear differences. This suggests that the relative immunosenesence of elderly allows higher viral replication, and hence a higher risk of viserotropic disease.

Free Communications – Oral Sessions; FC05.06

Yellow fever outbreak in Uganda

Presenter: Miller J

Summary: The recent yellow fever outbreak in Uganda was described. It was the first outbreak in Uganda since 1975, and occurred in five remote northern districts. There were 12 confirmed cases, 91% of whom were males and 41% died. A community survey found nine additional patients with evidence of yellow fever, giving an attack rate of 8 per 1000 residents. The outbreak peaked last November, and >700,000 doses of vaccine were given in late January.

Comment: Unlike many endemic areas of South America, yellow fever is not in the Ugandan vaccine schedule, leaving local populations susceptible.

Free Communications – Late Breaking Communications; FC08.03

Symposium: malaria

Presenters: Baird K et al

Summary/comment: Malaria continues to decline in many endemic regions thanks to control programmes (indoor residual spraying, insecticide impregnated bed nets), improved diagnostics with rapid tests, improved treatment with ACTs and urbanisation. Africa is the most rapidly urbanising continent. In 1990, there were 2500 megacities in Africa, and by 2020, it is predicted there will be 6000. The entomological inoculation rate in one place, which I didn't catch, varies from 7 in an urban area, 45 peri-urban and 167 in a rural area.

It has been documented that fewer British, Dutch and American travellers are getting malaria, and rates in travellers to India, SE Asia and West Africa have all fallen. These changes make advising our travellers more complex, as blanket recommendations for prophylaxis are no longer appropriate for increasing numbers of countries. Instead, we need to personalise recommendations according to the traveller's profile and type of travel. In addition, considerable international differences in malaria prophylaxis prescribing exist. The Austrian, German and Swiss guidelines recommend standby self-treatment, rather than prophylaxis, for an increasing number of destinations. There are no new prophylactic drugs available in the pipeline, but the Americans seem to use 30mg of primaquine quite often, especially where *P. vivax* is prevalent.

Symposium; SY13.01–03

Malaria: how to treat severe malaria in industrialized countries

Presenter: Zoller T

Summary: As experience with IV artesunate in endemic areas shows it to be rapidly effective and better than quinine for severe malaria, it is increasingly being used in nonendemic areas. In America, IV artesunate is monitored by the CDC under an investigational new drug protocol. Phase 1 and 2 studies are also being done there, but not yet reported. Nine patients treated in Norway have been reported, and their outcomes were good. Further European experience has recently been published in EID. Twenty-five travellers were treated in seven different centres (four in Germany and one each in Denmark, Sweden and Norway). Twenty had hyperparasitaemia (range 5–51%) and eight had cerebral malaria. Eighteen were travellers from Europe, and seven were immigrants returning from malaria-endemic areas where they had been visiting friends and relatives. All were successfully treated with rapid parasite elimination and no haemodynamic effects, but haemolysis occurred in six patients treated at five different centres; two of the centres only reported data for their patients with haemolysis. Haemolysis was seen 14–31 days after the first dose of IV artesunate, and lasted an average of 10 days. Five patients required a blood transfusion. Those with haemolysis had higher cumulative artesunate doses and received artesunate for longer.

Comment: The speaker recommended using IV artesunate if the parasitaemia is over 10% or if the patient has cardiac comorbidities or Black Water Fever. He would otherwise still advocate the use of quinine until more data are available.

Symposium; SY05.02

Independent commentary by Dr Joan Ingram, an Infectious Diseases Physician with a special interest in Travel Medicine. She was a foundation member of the New Zealand Society of Travel Medicine and one of the first in New Zealand to be awarded a Certificate in Travel Health by the International Society of Travel Medicine.

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Acute mountain sickness among travelers to Cusco-Peru (3,310 m)

Authors: Swanson J et al

Summary: 47% of 991 travellers leaving Cusco International Airport reported acute mountain sickness (AMS; Lake Louise score ≥3) and 35% had severe AMS (≥6). 20% of travellers reporting AMS had to stay in bed, change their itinerary, cancel tours and/or prolong their trip. Three (0.6%) were admitted to hospital and later evacuated. Flying from Lima to Cusco (odds ratio 1.62), using coca leaf products (1.78) and using sorojchi pills (1.94) were associated with having AMS, while visiting a city at a lower altitude first (0.49) and using acetazolamide (0.72) were protective.

Comment: Flights from Lima at sea level to Cusco (3310m) only take 45 minutes. Visitors to Cusco are strongly recommended to stay at an intermediate altitude such as Arequipa (2300m) or the Sacred Valley before sleeping in Cusco. Cusco is actually higher that Macchu Pichu (2450m).

Free Communications; FC03.01

An open label study of tadalafil and acetazolamide versus acetazolamide for prevention of severe mountain sickness

Authors: Leshem E et al

Summary: Tadalafil 20mg daily and acetazolamide 125mg twice daily or just acetazolamide was taken by 51 healthy trekkers climbing Mount Kilimanjaro in an open-label study. Medications were started on day 2 of the ascent (3950m). 4% of the tadalafil group had severe AMS (defined as high-altitude pulmonary oedema [HAPE] or high-altitude cerebral oedema) compared with 26% of the control group (p=0.05). The tadalafil group had lower rates of AMS (50% vs. 59%), lower average AMS scores during the ascent day (2.9 ±2 vs. 4.1 ±4.1) and higher rates of summiting (95% vs. 88%); however, these were not statistically significant.

Comment: Phosphodiesterase-5 inhibitors can selectively lower pulmonary artery pressure, hence their role in HAPE. This was a preliminary study, and more studies are needed.

Free Communications; FC04.06

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