1. **DENGUE: MARY ELIZABETH WILSON, MD**

*Clinical*


*During an epidemic in Brazil of DENV-4, >0.5% of blood donations were dengue-RNA positive. Approximately 1/3 of components led to transfusion transmission.*


*Lovastatin was safe and well tolerated in adults with dengue. It showed no evidence of benefit in patients with acute dengue.*

*Co-Infections: Dengue, Chikungunya, Zika; Immune Enhancement*


*Plasma immune to DENV cross reacted to ZIKV; able to drive antibody-dependent enhancement (ADE) of Zika infection.*

*Priyamvada L, et al. Human antibody responses after dengue virus infection are highly cross-reactive to Zika virus. PNAS 2016;113(28):7852-7857.

*Extensive cross reactivity. Preexisting immunity to DENV may affect immune response to Zika; may influence Zika virulence and disease activity in DENV-experienced populations.*


*Virologically confirmed homotypic reinfections were documented as part of an ongoing pediatric cohort study in Nicaragua.*

*Epidemiology*


*Asymptomatic persons are infectious to mosquitoes. They may contribute significantly more to transmission than previously recognized.*


*Virologically confirmed homotypic reinfections were documented as part of an ongoing pediatric cohort study in Nicaragua.*

*Vaccines and Their Use*


*First vaccine dose elicited sterilizing immunity to all four serotypes for at least one year.*

Authors hypothesize that live attenuated vaccine acts like silent natural infection. Vaccine effectiveness depends on age group and intensity of local transmission. In low transmission areas vaccination may increase incidence of more severe infections. Risk of hospitalization is increased in individuals vaccinated when seronegative. In high transmission settings, vaccination would benefit whole population.


Long-term follow up interim analyses are provided for >35,000 children from Asia-Pacific and Latin American countries. Higher incidence of hospitalization in year 3 among children <9 years. Pooled efficacy for symptomatic dengue during 25 months were 65.6% for those 9 years and older; 44.6% among those <9 years.


In randomized double-blind, placebo-controlled trial, recipients of TV003 and placebo were challenged 6 months later with a DENV-2 strain. Vaccine gave complete protection against infection.


Annual incidence of symptomatic dengue was 3.4%; annual incidence of asymptomatic dengue was 14.8%. Vaccine had efficacy of 33.5% against asymptomatic infection.


http://www.who.int/immunization/sage/meetings/2016/april/2_CMDVI_Report_FINAL.pdf

This paper and supporting models lay out the rational for recommending introducing the licensed vaccine, Dengvaxia (Sanofi Pasteur) only in regions with high endemicity (seroprevalence 70% or higher; not recommended when seroprevalence is <50% in age group targeted for vaccine). Recommended for use in those 9 years and older.

Vectors and Their Control


The Partnership for Dengue Control believes that no single intervention will be sufficient to control dengue disease and support the concept of integrated intervention. Vector control will continue to need vector control even with effective dengue vaccine.


Remarkable paucity of reliable evidence for the effectiveness of any dengue vector control method.

Burden and Economic

Documents burdens from dengue in children in 10 Asian and Latin American countries. Approximately 10% of febrile episodes were virologically confirmed dengue. Rates were generally higher and disease more severe in Asian than in Latin American countries.


Authors provide best estimates of mortality and incidence. Number of cases has more than doubled every decade.

2. LEISHMANIASIS: ANDRE A BOGGILD, MSC, MD, DTMH, FRCPC

Epidemiology


Pathogenesis


Clinical Features and Course


Diagnosis


Treatment and Management


**Prevention / Vaccine Development**


3. ZIKA: SUSAN HILLS, MBBS, MTH

General Reviews


Specific Clinical Presentations


New Transmission Scenarios


Congenital Infection

Moore CA, Staples JE, Dobyns WB et al. Characterizing the pattern of anomalies in congenital Zika syndrome for pediatric clinicians. JAMA Pediat. Published online November 3, 2016


Management and guidelines


**Vaccine Development**

Lipstich M, Cowling BJ. Zika vaccine trials. Science 2016; 353:1094-1095


**4. MALARIA: JOHANNA P. DAILY, MD**

**Epidemiology**

**US Malaria Surveillance**


**Worldwide Artemisinin Resistance**


**Plasmodium falciparum Mortality in Africa**


**Malaria vaccine (RTS,S/AS01) efficacy at seven years.**


**Antimalarial treatment during Ebola is associated with differences in mortality**


**Malaria: Ebola interaction**

Clinical Management

Effectiveness of twice a week prophylaxis with atovaquone–proguanil (MalaroneVR) in long-term travellers to West Africa. Journal of Travel Medicine. 2016, 1-5. Is atovaquone-proguanil 2x a week sufficient anti-malarial prophylaxis? This observational study presents insufficient evidence for this approach.

Treatment of Plasmodium knowlesi Malaria

Diagnosis and Treatment of Plasmodium vivax Malaria

Malaria and Pregnancy
Four Artemisinin-Based Treatments in African Pregnant Women with Malaria. PREGACT Study Group, et al. N Engl J Med. 2016 Mar 10;374(10):913-27. Artemether–lumefantrine was associated with the fewest adverse effects and with acceptable cure rates but provided the shortest post-treatment prophylaxis, whereas dihydroartemisinin–piperaquine had the best efficacy and an acceptable safety profile. Drug-related adverse events such as asthenia, poor appetite, dizziness, nausea, and vomiting occurred significantly more frequently in the mefloquine–artesunate group (50.6%) and the amodiaquine–artesunate group (48.5%) than in the dihydroartemisinin–piperaquine group (20.6%) and the artemether–lumefantrine group (11.5%) (P<0.001 for comparison among the four groups).

Lumbar puncture safety during cerebral malaria