15th International Congress on Infectious Diseases

BANGKOK, THAILAND • JUNE 13~16, 2012

Organized by the International Society for Infectious Diseases

In collaboration with the Infectious Disease Association of Thailand

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Satellite Symposia Program and Abstracts

Organized by the
International Society for Infectious Diseases
Optimizing Care in the Immunocompromised Host

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Chair: Boonmee Sathapatayavongs (Thailand)

Welcome and introduction
Boonmee Sathapatayavongs (Thailand)

The key challenges and issues faced when treating invasive Aspergillosis in immunocompromised population: Asian perspective
Siriorn Watcharananan (Thailand)

Managing fungal infections in the immunocompromised host:
From diagnosis to treatment
Jose Vazquez (USA)

Q&A and discussion

Closing remarks
Boonmee Sathapatayavongs (Thailand)
The Value of Broad Implementation of Multivalent Vaccines

*Sponsored by MSD*

Chair: Somsak Lolekha (Thailand)

12:45 – 12:50 Welcome and introductions
Somsak Lolekha (Thailand)

12:50 – 13:10 Implementation and impact of rotavirus vaccine
Helen Marshall (Australia)

13:10 – 13:20 Q&A panel
*Moderator:* Somsak Lolekha (Thailand)

13:20 – 14:00 Human Papillomavirus (HPV) vaccine
- Importance of universal implementation for the pediatrician
  Kenneth Alexander (USA)
- Impact of public vaccination programs (The Australian Experience)
  Andrew Grulich (Australia)

14:00-14:10 Q&A panel
*Moderator:* Somsak Lolekha (Thailand)

14:10-14:15 Closing remarks
Somsak Lolekha (Thailand)
Satellite Symposium ~ Thursday, June 14, 2012

Thursday, June 14, 2012 12:45–14:15 Room Lotus 5–7

Pneumococcal Conjugate Vaccines for Prevention of Paediatric Pneumococcal Infections—New Data, New Opportunities

*Sponsored by GlaxoSmithKline*

*Chair:* Tawee Chotpitayasunondh (Thailand)

12:45 – 12:50 Welcome and introduction
Tawee Chotpitayasunondh (Thailand)

12:50 – 13:10 The impact of pneumococcal conjugate vaccines on invasive pneumococcal disease and the remaining challenges
Richard Adegbola (Belgium)

13:10 – 13:30 Pneumococcal conjugate vaccines and prevention of pneumonia—What have we learned?
Shabir Madhi (South Africa)

13:30 – 13:50 Otitis media in an era of pneumococcal conjugate vaccines—New data, evolving perspectives
Anne Vergison (Belgium)

13:50 – 14:15 Q&A
Prevention of Pneumococcal Disease: Celebrating the Past with an Eye on the Future

*Sponsored by Pfizer*

**Chair:** Raul Iurstiz (Venezuela)

**Opening remarks**
Raul Iurstiz (Venezuela)

**Global burden of pneumococcal disease in children and adults: The need for enhanced protection**
Donald Low (Canada)

**Around the world with PCV13:**
From introduction to emerging evidence of effectiveness in children
Gregg Sylvester (USA)

**Adult pneumococcal disease prevention:**
The PCV13 Clinical Data Story
Raul Iurstiz (Venezuela)

**Question and answer session**
Faculty Panel
Managing Infectious Diseases in 2012 and Beyond

*Sponsored by MSD*

**Chair:** Terapong Tantawichien (Thailand)

**12:45 – 12:50**  
Introduction  
Terapong Tantawichien (Thailand)

*Antimicrobial stewardship. From paper to patient bedside*

**12:50 – 13:00**  
Implementing antimicrobial stewardship  
in a Hospital Setting.  
A novel initiative by MSD  
Ankur Gupta (India)

**13:00 – 13:20**  
Experience sharing of setting up an antimicrobial  
stewardship program in a hospital  
Vivek Nangia (India)

**13:20 – 13:45**  
Management of invasive fungal infections.  
From guidelines to practice  
Brian Lakelin Jones (United Kingdom)

**13:45 – 14:00**  
Test and treat—A new approach to prevent  
HIV transmission  
Charles Farthing (Hong Kong, P.R. China)

**14:00 – 14:15**  
Q&A
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Paediatric Vaccines: Beyond the Basics of Rotavirus, Varicella and Pertussis Vaccination

*Sponsored by GlaxoSmithKline*

*Chair:* Usa Thisayakron (Thailand)

12:45 – 12:50  Welcome and introduction
Usa Thisayakron (Thailand)

12:50 – 13:15  Human rotavirus story—Impact from various regions
Miguel O’Ryan (Chile)

13:15 – 13:35  Varicella vaccination—Moving towards higher protection with two doses
Roman Prymula (Czech Republic)

13:35 – 14:00  Improving immunization strategies to help protect against pertussis throughout life
Susanna Esposito (Italy)

14:00 – 14:10  Overall discussion and Q&A

14:10 – 14:15  Symposium conclusion
Usa Thisayakron (Thailand)
Effective Adult Vaccination: 
From Science to Implementation

Sponsored by MSD  
Chair: Kurien Thomas (Oman)

18:00 – 18:05   Welcome and introductions  
The importance of adult vaccination  
Kurien Thomas (Oman)

18:08 – 18:25   Pneumococcal disease and vaccination  
• Global burden  
• Country recommendations  
• Long-term antibody persistence  
John Grabenstein (USA)

18:25 – 18:45   From vaccine to vaccination: Clinical implementation  
David Weber (USA)

18:45 – 19:00   Q&A panel  
Moderator: Kurien Thomas (Oman)

19:00 – 19:20   Herpes zoster—From pain to prevention  
Barbara Yawn (USA)

19:20 – 19:40   Impact of herpes zoster vaccination on quality of life  
Myron Levin (USA)

19:40 – 19:55   Q&A panel  
Moderator: Eddy Bresnitz (USA)

19:55 – 20:00   Closing remarks  
Eddy Bresnitz (USA)
Managing MRSA and Complicated Intra-abdominal Infections: Rationale and Future Approaches

Sponsored by Pfizer

Chair: Visanu Thamlikitkul (Thailand)

Welcome and introduction
Visanu Thamlikitkul (Thailand)

The war against MRSA nosocomial pneumonia:
Have we won the battle so far, or has it just started?
Michael Niederman (USA)

Patients with complicated intra-abdominal infections:
New insights into clinical results and treatment practice
Edward Domínguez (USA)

Q&A panel

Closing remarks
Visanu Thamlikitkul (Thailand)
Managing fungal infections in the immunocompromised host: From diagnosis to treatment

Jose A Vazquez, MD, FACP, FIDSA
Senior Staff, Division of Infectious Disease
Director, Microbiology and Infectious Disease Translational Research Center, Henry Ford Hospital, and
Professor of Medicine, Division of Infectious Disease
Wayne State University School of Medicine
Detroit, Michigan, USA

During the last quarter century, numerous factors have led to an increased incidence of invasive fungal infections (IFI) in immunocompromised patients. This trend has witnessed a dramatic increase in classic fungal pathogens (candidiasis and aspergillosis), as well as the emergence of fungal infections due to organisms once thought to be non-pathogenic (trichosporonosis, fusariosis).

Despite the increasing incidence of fungal infections, there have been few epidemiologic studies or new diagnostic assays approved for use in the diagnosis of invasive aspergillosis. Recently, the PATH database has revealed a significant increase in infections due to Aspergillus spp, which now account for about 15% of all IFI, especially in patients in the intensive care unit (ICU).

However, the diagnosis stills remains difficult to make without a tissue biopsy. Thus, having an increased index of suspicion in the high-risk population is extremely important in initiating early and appropriate antifungal therapy.

Guidelines to treat invasive aspergillosis have been approved and published by Infectious Diseases Society of America (IDSA)/Mycosis Study Group. This has led to the recommendation of voriconazole as the drug of choice in most infections due to Aspergillus spp.

Furthermore, the initiation of early antifungal therapy is now frequently recommended in certain high-risk groups. Besides for documented fungal infections, antifungals are frequently recommended as either antifungal prophylaxis, as empiric antifungal therapy, or as early presumptive therapy.

Satellite Symposium
Pneumococcal Conjugate Vaccines for Prevention of Paediatric Pneumococcal Infections—New Data, New Opportunities
Sponsored by GlaxoSmithKline
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Room Lotus 5–7
12:45–14:15

The impact of pneumococcal conjugate vaccines on invasive pneumococcal disease and the remaining challenges

Dr. Richard Adegbola

Each year, invasive pneumococcal disease (IPD) causes a significant morbidity and mortality burden in children <5 years, with most of the deaths occurring in developing countries. The impact of the introduction of the 7-valent pneumococcal conjugate vaccine (PCV-7) was considerable. Several studies in a number of countries described significant decreases in the
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rate of IPD in children shortly after PCV-7 introduction. Reduction in overall IPD resulted in net benefit despite the evidence of an increase in non-vaccine serotype, suggestive of replacement disease. Furthermore, herd protection against IPD caused by vaccine and 6A serotypes in unvaccinated individuals was also reported.

Similarly, the introduction of universal mass vaccination (UMV) with pneumococcal non-typeable Haemophilus influenzae protein D conjugate vaccine (PHID-CV) has been shown to decrease rates of IPD, including pneumococcal meningitis (PM), in diverse geographical areas such as Brazil, Kenya, Finland and Quebec, Canada. For example, introduction of PHID-CV into the Brazilian Immunization Program led to reductions of 71% (95% CI, 48–83) in overall IPD and 85% (95% CI, 64–94) in vaccine-serotype disease, reported following laboratory-based surveillance during 2010–2011 in 10 Brazilian states.

The significant reductions in IPD in paediatric populations following the introduction of PCVs in UMV programs has led the World Health Organization (WHO) to recommend that countries prioritise inclusion of PCVs in national routine immunization programs. However, a number of challenges remain if this is to happen in developing countries. These challenges include the need for an established immunization infrastructure; the education of the public on the importance of vaccination for disease prevention, and of primary health care workers on new products more specifically; maintenance of high coverage levels; and surveillance so that the impact of vaccination can be quantifiably demonstrated. In meeting these challenges, the support of supranational organizations including WHO, UNICEF, the Global Alliance for Vaccines and Immunization (GAVI) and the Bill and Melinda Gates Foundation, is crucial.

As the weight of clinical data supporting the inclusion of PCVs in national immunization programs increases, authorities in developing countries should be encouraged to implement such vaccination, and thus progress towards achieving the millennium goals.

Pneumococcal conjugate vaccines and prevention of pneumonia—what have we learned?

Professor Shabir Madhi

Childhood pneumonia is associated with significant mortality and is the leading cause of death in children aged <5 years, equating to approximately 1.5 million deaths a year. There are many causative agents for community-acquired pneumonia, including viruses and bacteria. The aetiology is not well established and two major studies are ongoing to broaden our understanding, PERCH and EPIC. Despite these questions, Streptococcus pneumoniae is an established key bacterial pathogen.

The introduction of pneumococcal conjugate vaccines (PCVs) has been successful in reducing the burden of pneumonia. Efficacy studies have been conducted with a number of PCVs of differing valency. Despite the differences in serotype content and study settings, efficacy point estimates for WHO-defined consolidated community-acquired childhood pneumonia are within a similar range for the different vaccines. For most studies, these are within a narrow range from 21% (95% CI: 4.34) in the initial analysis in the PCV7 NCKP study to 30% (95% CI: 11.46), though point estimates for PCV in the Gambian study were higher at 37% (95% CI: 27.45). In fact, the pooled relative risk from a meta-analysis of studies was 0.73, equivalent to an efficacy of 27% (95% CI: 15.36) for WHO X-ray-defined pneumonia and 6% (95% CI: 2.9) for clinical pneumonia. The most recent efficacy data come from the 10-valent PCV evaluated in the Clinical Otitis Media and Pneumonia study conducted in Latin America. Again, the efficacy point estimate against WHO-consolidated pneumonia was 23% (95% CI: 9.36), in range with the other studies. Post-implementation effectiveness data provide further data supporting the use of PCVs. The introduction of PCV7 or the 10-valent pneumococcal Haemophilus influenzae protein D conjugate vaccine into universal vaccination programs using different immunizationschedules has resulted in reduction in community-acquired pneumonia and pneumonia hospitalizations due to pneumococcal pneumonia in children in a number of countries including the USA and Brazil.

Combined, the evidence for both the efficacy and effectiveness of PCVs demonstrates their value in helping to protect children against pneumonia, and points towards the increasing need to implement mass vaccination with the available vaccines to further reduce mortality caused by the disease.

Otitis media in an era of pneumococcal conjugate vaccines—new data, evolving perspectives

Professor Anne Vergison

Acute otitis media (AOM) is one of the most frequent bacterial infections for which medical advice is sought, and is a major contributor to antibiotic prescriptions in young children. The burden of AOM on primary healthcare physicians and specialists is considerable, and AOM results in substantial economic cost and significant distress for individual patients and their caregivers.

It is widely shown that Streptococcus pneumoniae and Haemophilus influenzae are the most common bacterial causes of otitis media. Vaccination against these bacteria may exert significant impact on the incidence of disease. For all-cause AOM episodes, efficacy data from randomised pneumococcal vaccine trials ranged from -1 to 7% for OMP-/CRM-based 7-valent pneumococcal conjugate vaccine (PCV) formulations, and up to 34% for an 11-valent pneumococcal Haemophilus influenzae Protein D-conjugated vaccine. Conversely, consistent efficacy of 56–58% was reported for protection against AOM caused by vaccine serotypes. There may be numerous reasons for the discrepancy in efficacy results for overall and vaccine-type AOM, including differences in study background, design and local epidemiology. Negative point efficacy estimates for non-vaccine serotypes and other pathogens in FinOM suggest that serotype and pathogen replacement may also influence overall impact of PCVs on AOM. No effectiveness data are available for PCVs on AOM. Impact of the 7-valent PCV on AOM following implementation of universal mass vaccination programs has been evaluated in observational studies using large administrative databases. In these studies, reported reduction estimates in overall AOM visits or episodes range widely, from 4 to 43%. Vaccine serotypes have been virtually eradicated from carriage and are hence most likely no longer causing AOM, although some other serotypes may have partly replaced them. Moreover, observed reductions are unlikely to be solely attributable to vaccine use; factors such as temporal trends demonstrated by the decrease in AOM before introduction of the vaccine, as well as changes in diagnosis accuracy and treatment guidelines could also impact reported rates.

Due care is required in interpreting the results of these observational studies, but they nevertheless confirm the efficacy trials and provide evidence that vaccination can reduce the burden of AOM in infants.
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Satellite Symposium
Prevention of Pneumococcal Disease: Celebrating the Past with an Eye on the Future
Sponsored by Pfizer
Friday, June 15, 2012
Ballroom B
12:45–14:15

Worldwide, pneumococcal disease is a leading cause of vaccine-preventable death, with the greatest disease burden occurring in infants and older adults. More than a decade after the introduction of the 7-valent pneumococcal conjugate vaccine (PCV7), Streptococcus pneumoniae remains a significant healthcare challenge, due in part to the evolving epidemiology of the pneumococcus and the aging global population. With multiple PCVs now licensed for use in infants and children, and PCV13 now approved for use in adults as an alternative to the polysaccharide vaccine, clinicians and health officials must evaluate existing data to determine the continuing burden of pneumococcal disease, the distribution of pneumococcal serotypes within regions, and differences between vaccine options. In this symposium, global experts on pneumococcal disease and vaccines will answer the following questions:

- What is the current global burden of pneumococcal disease?
- How do immune responses to polysaccharide and conjugate vaccines differ?
- What early data suggests the impact PCV13 is having on pediatric pneumococcal disease?
- How does the clinical data support the use of PVC13 in adults?

Implementing Antimicrobial Stewardship in a Hospital Setting. A novel initiative by MSD

Dr. Ankur Gupta, MD
Medical Advisor, MSD Pharmaceuticals, India

Antimicrobial Stewardship program was started by MSD Pharmaceuticals, India in the year 2008 with an objective of promoting evidence based and rational use of antibiotics in the hospitals. The approach adopted in this program was to help hospitals make treatment protocols for different infections based primarily on the hospital’s own local microbiology data and antibiogram. At the same time other globally recommended principles of antimicrobial stewardship like antibiotic dose optimization, de-escalation, education, prospective audit/ intervention and patient risk stratification for presence of multi-drug resistant pathogens are also interwoven with the local microbiology data of hospital to make treatment protocols for the hospital which are perfect example of “Think Global, Act Local.” So far in the last 3 years, this program has helped more than 50 hospitals in the country to adopt antimicrobial stewardship. The cascade of events for rolling out Antibiotic stewardship in a particular hospital is as follows:

**Stakeholder Forum Meeting:** Main stakeholders (Clinicians, Microbiologist, Infection control committee and Infectious disease specialist) from the hospital are called and briefed about the programme. The input and feedback of stakeholders is taken.

**Status of Microbiology data confirmed and Date for Hospital workshop is decided**

**Collection of Microbiology Data:** Following the Speaker forum, the microbiologist arranges and collates the data in the specific format. This step usually takes anywhere between 15 days to 2 months depending on the quality and quantity of microbiology data. The medical team from MSD pharmaceuticals can help the microbiologist in collating and refining data.

**Making and reviewing Indication Specific Antibiotic Protocols:** Once the data is ready, Indication specific antibiotic protocols are made in collaboration with the microbiologist and the clinicians. The feedback and suggestions are taken from different stakeholders in the hospital before finalizing the protocols. The protocols are made for 5 infections for ICU patients and ward patients. For eg: Blood Stream Infections (ICU and Ward), Urinary tract Infections (ICU and Ward), Skin and Soft Tissue Infections (ICU and Ward), Respiratory Tract Infections (ICU and Ward) and Intra-abdominal Infections (ICU and Ward)

**Antibiotic Stewardship Workshop in the Hospital:** Once the protocols are ready, a half-a-day workshop is organized in the hospital involving representatives of each and every department of the hospital. Workshop has two sections:

- **Education**
- **Practical Workshop**

In the Education section: scientific presentations are made by either the stakeholders from the hospital or the interested clinicians on the following topics:

1. Antibiotic stewardship guidelines
2. Antibiotic resistance scenario in the country and the hospital
3. Collateral damage by antibiotics
4. Basic understanding on antibiotics and Pharmacokinetics and Pharmacodynamics

In the Workshop section: the audience is briefed about, How the antibiotic protocol was evolved and then case studies are discussed. In the end the draft of the protocols are shared with the audience and their approval is taken.

**Printing of the Protocols and Implementation:** Following the workshop, protocol booklets/posters are printed and distributed in the hospital. Hospital management is entrusted with the responsibility of ensuring implementation of protocols and regular review and audit.

The final objectives of Antibiotic Stewardship are:

- Overall understanding on all class of antibiotics and related issues of resistance.
- To build a consensus between different stakeholders in hospital (The clinician, the microbiologist, the pharmacy and the management) to frame hospital specific antibiotic protocols.
- To ensure the implementation of these protocols across the hospitals, regular review, audit and update.
Implementing Antibiotic Stewardship Program in a resource limited country—an Indian experience

Dr. Vivek Nangia, MD, FCCP, Diploma Infectious Diseases (UK)
Additional Director & Head
Pulmonary and Infectious Diseases
Fortis Hospital, New Delhi

The initiative taken by the Infectious Diseases Society of America and Society for Healthcare Epidemiology of America in 2007 in the form of Antibiotic stewardship program promises to optimize clinical outcomes while minimizing the emergence of resistance. The stewardship program recommends constituting a team comprising Infectious diseases physician, Clinical pharmacist with infectious diseases training, Clinical microbiologist, Infection control professional/nurse, Hospital epidemiologist and IT specialist. In a country like India where infectious diseases does not exist as a specialty, it is difficult to find such professionals. Truly qualified Infectious diseases specialists are a handful across the country, most pharmacists are involved only in dispensing medicines and not actively involved in clinical decisions, microbiologists are confined to the Laboratory and hardly ever come in contact with the patients. No formal training in infection control measures takes place for the nurses to be called infection control nurse. Hospital epidemiologists are considered a burden on the hospital resources and hence never employed.

There are certain other problems unique to Indian circumstances like lack of hospital antibiotic policies, unrestricted antibiotic formulary and uncontrolled antibiotic prescriptions by one and all. Since in most private hospitals, physicians work on a revenue sharing model, infectious diseases physician is considered a threat to the practice of an internist.

The program also recommends setting up an elaborate hospital information system involving huge costs which not many hospitals are able to afford.

However, against all odds and keeping practical issues in consideration, we decided to customize and implement antimicrobial stewardship at our group of hospitals. The first step was to rope in like minded intensivists and microbiologists to take stock of the situation on the existing antibiotic prescription practices and what emerged stupefied all. This led to a series of meetings with the hospital administration convincing them about how rationalizing the antibiotic prescription will not only bring down the collateral damage caused but also serve as a quality parameter to enhance the standards of the organization. Soon, a decision to implement the antimicrobial stewardship program in 13 group hospitals, with the support of MSD Pharmaceuticals, India was taken. A central task force committee (CTFC), comprising 4 members from each unit (a clinician, a microbiologist, pharmacist and an administrator) was formed. The main objectives of CTFC were to collate the microbiological data from each of the participating hospitals on the basis of risk stratification strategy of the patients and then lay down the antibiotic policies for the 4 main infections (Urine, Blood, Respiratory and SSI) according to the patient risk stratification, local microbiology data and de-escalation. Consensus Guidelines for surgical prophylaxis were also included. A list of restricted antibiotics, which could only be given after consulting the unit team, was drawn out. The responsibilities of the unit team included collecting the data, working in close coordination with the Hospital Infection Control committee, Medical Audit Committee, Quality team, Drug Formulary Committee & Pharmacists and ensuring implementation subsequently.

Implementing antimicrobial stewardship program promises to optimize clinical outcomes while minimizing the emergence of resistance. The stewardship program recommends constituting a team comprising Infectious diseases physician, Clinical pharmacist with infectious diseases training, Clinical microbiologist, Infection control professional/nurse, Hospital epidemiologist and IT specialist. In a country like India where infectious diseases does not exist as a specialty, it is difficult to find such professionals. Truly qualified Infectious diseases specialists are a handful across the country, most pharmacists are involved only in dispensing medicines and not actively involved in clinical decisions, microbiologists are confined to the Laboratory and hardly ever come in contact with the patients. No formal training in infection control measures takes place for the nurses to be called infection control nurse. Hospital epidemiologists are considered a burden on the hospital resources and hence never employed.

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Seminar and symposia were held across all hospitals emphasizing on the magnitude of MDR pathogens, need for AMS program and optimizing therapy with early institution of appropriate therapy in recommended dosages, monotherapy (wherever feasible), using the principles of pharmacokinetics, pharmacodynamics, de-escalation, early switch to oral therapy and short duration of therapy. These symposia were made mandatory for all to attend. The implementation of antibiotic policies was not easy. Antimicrobial use forms for collecting data on antimicrobial usage in medical ICU were made and distributed. This was done to assess the baseline antimicrobial usage pattern in the ICU and subsequently what change the implementation of antibiotic policy has brought in the antibiotic usage practices. The physicians most likely to be recalcitrant to the policies were included in the CTF meetings and made responsible for implementing the same in their own departments.

The AMS program in our hospitals is now in its final phase which includes auditing and positive feedback to the clinician by the unit team which gains its strength from the presence of the administrator. The first 3 monthly audit of antimicrobial usage in medical ICU will be done in July 2012.

Management of invasive fungal infections. From Guidelines to Practice

Dr. Brian Lakelin Jones
Consultant in Medical Microbiology
Honorary Clinical Associate Professor
College of Medical, Veterinary & Life Sciences
University of Glasgow, Scotland, UK

Abstract unavailable at the time of going to print.

Test and Treat. A new approach to prevent HIV transmission

Dr. Charles Farthing, MD
Regional Director for Medical Affairs—Infectious Diseases/HIV
Merck Sharp & Dohme, Asia Pacific, Hong Kong

Since treatment for prevention for HIV (treatment of HIV infection, regardless of the patient’s CD4 count) was first suggested as a strategy to slow the spread of the HIV epidemic, by Julio Montaner in the Lancet in 2006, the idea has gained great momentum. The WHO has published modelling studies on just how effective T for P could be if well implemented. T for P has been embraced by the cities of San Francisco and New York, and the province of British Columbia, and there are many research studies underway examining the efficacy and feasibility of such an approach. The results of the HTPN 052 study presented at the IAS meeting in Rome 2011, showing a 96% reduction in the risk of transmission between discordant couples with T for P has provided the best evidence to date that such an approach could be effective. Another recent study by Tanser from South Africa, presented at CROI 2012, showed that for every 1% of HIV infected persons treated in a country there is a 1.7% decrease in the yearly acquisition of new infections in that country. These study results have led to some countries, such as China, to institute a policy of T for P for discordant couples, and to considering the same for other high risk groups such as MSM—and even the whole population. In March 2012 the DHHS produced new guidelines for the treatment of HIV infection in adults in the USA, and has recommended, for the first time, that all adult HIV+ patients be treated regardless of CD4, based on evidence (of varying strength for different CD4 strata), that such treatment prolongs life and reduces morbidity at any CD4. If these guidelines become
accepted widely then treatment for prevention will occur as a consequence of guidelines largely introduced because of benefit for patients, rather than the community. Other country guidelines to date are not so all inclusive in their recommendations for ARV therapy, and there are many feasibility and economic issues to address before T for P is likely to become universally adopted as an attempt to contain the HIV epidemic.

Satellite Symposium

Paediatric Vaccines: Beyond the Basics of Rotavirus, Varicella and Pertussis Vaccination

Sponsored by GlaxoSmithKline

Friday, June 15, 2012

Room Lotus 5–7

12:45–14:15

Human rotavirus story—impact from various regions

Professor Miguel O’Ryan

Diarrhoea remains the second most common cause of infant death worldwide, with an estimated 453,000 rotavirus (RV) deaths occurring annually among children aged <5 years. Worldwide, an average of 39% of paediatric diarrhoeal hospitalizations are attributed to RV, demonstrating the significant contribution of the pathogen to the overall burden of diarrhoeal disease.

Given the widespread burden of RV, vaccines able to protect infants against a wide diversity of strains, irrespective of setting, are desirable. Furthermore, a high incidence of symptomatic RV disease is being reported in young infants, therefore, early vaccination is necessary to prevent the serious consequences of primary natural RV infection, namely severe diarrhoea, hospitalization and death. The oral, live-attenuated human RV vaccine (HRV, GlaxoSmithKline Biologicals) is a two-dose vaccine derived from a human strain, developed to elicit protection against severe illness by mimicking the immunity conferred by natural infection.

HRV has had a substantial impact in various settings where universal mass vaccination is implemented and vaccination coverage is high. Following HRV introduction, significant reductions in RV gastroenteritis (RVGE) hospitalizations were observed in two Australian states and Belgium. In Brazil, high-level protection was conferred by HRV against G2P[4] RVGE during consecutive RV seasons. Furthermore, Mexico, Brazil and Panama benefited from reductions in diarrhoea-related mortality in children aged <5 years following HRV introduction. Collectively, real-world impact data demonstrate the significant potential of RV vaccination as a means to help address the global burden of childhood diarrhoeal disease.

Varicella vaccination—moving towards higher protection with two doses

Professor Roman Prymula

Varicella is a highly contagious disease. Routine varicella vaccination using a one-dose schedule has had an impact on disease incidence, hospitalizations and mortality. However, the vaccine effectiveness (VE) of routine one-dose varicella vaccination in preventing disease across 13 outbreaks during 1997 to 2008 varied from 44% to 100% (median 85%), resulting in cases of breakthrough varicella (defined as varicella >42 days post-vaccination). Whilst breakthrough varicella is generally milder than wild-type disease, it is potentially contagious, allowing continued transmission of the virus. Therefore, two-dose schedules have been introduced in many countries. Support for the use of a two-dose schedule has come from studies in Germany and the USA. VE across seven German outbreaks in 2008–2009 was 62% for one dose and 94% for two doses, and VE in a case-controlled US study, was 86% for one dose and 98% for two doses. In a 10-year follow-up of children vaccinated with one vs two doses of varicella vaccine, 7.3% vs 2.2% (p<0.001), respectively, of vaccinees experienced breakthrough varicella. Additionally, children with higher antibody titres are less likely to develop breakthrough varicella. Our data from an observer-blind trial with children aged 12–22 months (N=5803) from 10 European countries showed that the efficacy of two-dose measles-mumps-rubella-varicella vaccination was 94.9% against all varicella and 99.5% against moderate/severe varicella.9 Efficacy of one-dose monovalent varicella vaccination was 65.4% against all varicella and 90.7% against moderate/severe varicella (post hoc).

The optimal timing for the second dose of varicella vaccine in children remains an open question. However, administering the second dose close to the first (e.g. in the second year of life) would increase the immune response in children who do not adequately respond to the first dose (up to 24% of vaccinees when measured by the fluorescent antibody to membrane antigen assay). Additionally, experience with MMR vaccination in Germany shows that second-dose coverage rates could potentially increase if the second dose is given close to the first.

Improving immunization strategies to help protect against pertussis throughout life

Professor Susanna Esposito

While pertussis incidence has reduced substantially since the introduction of universal pertussis immunization in infants, it remains an important cause of morbidity and mortality. Indeed, it is estimated that there were 16 million cases and 195,000 deaths in 2006. The pattern of pertussis epidemiology has shifted over recent years with increased incidence seen in adolescents, adults and young infants. Factors contributing to this changing epidemiological pattern include waning immunity, atypical or unrecognised presentation of the disease, improved diagnostic testing, increased awareness and surveillance. Adults and adolescents can suffer substantial morbidity with pertussis illness, and represent a significant source of infection for susceptible infants.

Primary pertussis vaccination in infants is traditionally administered via a three-dose schedule (e.g. 2–3–4 months or 2–4–6 months with a booster in the second year of life); however, some countries are employing a 2+1 schedule (3–5–11 months). A recent pooled analysis of four studies using GSK Biologicals’ hexavalent vaccine DTPa-HBV-IPV/Hib, demonstrated an adequate immune response using this schedule.

While booster vaccination recommendations and schedules vary between regions, recommendations exist for immunization of pre-school children, adolescents, adults and close contacts of newborns (i.e. cocooning). GSK Biologicals’ combined, reduced-antigen content diphtheria, tetanus and acellular pertussis (dTpa) vaccine, has demonstrated immunogenicity in pre-school children, adolescents and adults.

In summary, we now have the means and opportunity to provide primary and booster vaccination for the entire population to help control the circulation of B. pertussis.
Patients with complicated intra-abdominal infections: New insights into clinical results and treatment practice

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The Infectious Disease Society of America (IDSA) defines complicated intra-abdominal infections (cIAI) as those that “extend beyond the hollow viscus of origin into the peritoneal space and are associated either with abscess formation or with peritonitis.” Mortality may be as high as 60%. Generally both aerobic and anaerobic bacteria contribute to infection. In community-acquired infections, the pathogens most commonly identified are Enterobacteriaceae (E. coli, Klebsiella species, etc) and anaerobes, especially Bacteroides species. Healthcare-associated infections typically are caused by more resistant bacteria, including species of Pseudomonas, Enterobacter, Proteus and Enterococcus. Consequently, empirical therapy must be broad enough to cover the suspected pathogens.

The Surgical Infection Society (SIS) recommendations for treatment of patients with mild to moderate disease include monotherapy with cefoxitin, cefotetan, ampicillin-sulbactam or ticarcillin-clavulanic acid. The IDSA guidelines for these same patients include tigecycline, ampicillin-sulbactam, ertapenem or ticarcillin-clavulanic acid. There is no preference for one agent over another in patients who are low-risk for multidrug-resistant strains.

High-severity patients have higher mortality and higher recurrence rates due to a number of risk factors: poor nutritional status, high APACHE II score, immunosuppression, significant cardiovascular disease and lack of source control. For these patients, both guidelines include monotherapy options but with different agents, namely meropenem, imipenem-clilastatin and piperacillin-tazobactam. Effective empirical therapy has an important effect on outcome. Susceptibility to the initial regimen has been shown in several studies to predict treatment success, and in one retrospective study, mortality as well.

Enterococcus is found in 5–20% of cIAI cases. However, the need for antibiotic coverage against Enterococcus depends upon the clinical setting. In mild to moderate community-acquired infections, there are no studies supporting the need for anti-enterococcal activity. However, for patients with healthcare-associated infections, enterococcal coverage is prudent; specific regimens should be directed by local susceptibility patterns and by culture.

Healthcare-associated cIAI are more likely to be caused by multidrug resistant bacteria and by nosocomial bacteria. These infections often occur after elective or emergent surgery and after prolonged antibiotic administration. Pseudomonas should be suspected in these instances. For such patients, combination therapy, often with an aminoglycoside, is recommended in both guidelines.
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