

Summary Report on the 46th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC)

San Francisco, USA, September 27 – 30, 2006.

Dr Piotr Chlebicki, Changi General Hospital

1. Introduction

The 46th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC), organized by the American Society of Microbiology (ASM), is one of the biggest infectious disease conferences in the world.

About 12,000 participants from around the world, including physicians, clinical microbiologists, researchers, pharmacists, trainees and other healthcare professionals, were anticipated to attend the 46th ICAAC.

2. Current issues in infectious diseases and infection control (Updates)

In addition to microbiology topics, current issues in infectious diseases and infection control were also addressed. This year, the four major topics that dominated the ICAAC conference were:

- a) Growing antimicrobial resistance
- b) Tenth anniversary of Highly Active Antiretroviral Therapy (HAART)
- c) Progress in antifungal therapy
- d) The threat of avian influenza

2.1 Growing antimicrobial resistance

The workshop on organizing antimicrobial stewardship program focuses an important message for the participants, i.e. "To start with a pilot study and then proceed with small, limited antimicrobial control program. Show to the management on the cost savings. Once this is proven, further requests for money and manpower will be easily accommodated".

In addition, other key learning points featured in the workshop include:

- a) Importance of using standardized (WHO) Defined Daily Doses (DDD). The DDDs are listed on a free website.
- b) Statens Serum Institute, Denmark, will soon release free software to calculate antibiotic use.
- c) Practical lecture on how to organize audit of surgical prophylaxis.

Although there is a rapid increased in antimicrobial resistance among the Gram-negative bacteria, there is a lack of new classes of antibiotics in the pipeline against these group of bacteria for the following reasons:

- a) There are only a few modifications of older antibiotics undergoing clinical evaluation (paratek or doripenem)
- b) Pharmaceutical companies are not motivated to develop new antibiotics

- c) It is much more profitable to develop new drug for hyperlipidemia or for hypertension.

The situation of antimicrobial resistance among the Gram-positive bacteria, however, appears much better:

- a) There are 2 new cephalosporins active against MRSA, entering phase 3 trials: ceftobiprole and ceftaroline
- b) Several new antibiotics will soon be available.

2.2 Tenth anniversary of Highly Active Antiretroviral Therapy (HAART)

Highly Active Antiretroviral Therapy (HAART) revolutionized treatment of AIDS. HIV disease became chronic, manageable disorder much like diabetes. It is also highly cost effective. Several new drugs will soon be available.

2.3 Progress in antifungal therapy

Several new anti-fungal drugs such as posaconazole or echinocandins (caspofungin, micafungin, and anidulafungin) are now (or will soon be) available.

Echinocandins are fungicidal against yeast and fungistatic against mold. Their limited toxicity profile and minimal drug-drug interactions make them an attractive new option for the treatment of invasive fungal infections. In addition, their cost limits their use as initial therapy for patients with fungemia even in medical centers with a high rate of triazole-resistant Candida infections.

The difference between two new drugs (micafungin, and anidulafungin) and older caspofungin is small and is yet to be defined.

2.4 The threat of avian influenza

It is encouraging that so much is finally happening in this field. Multiple lectures addressed mathematical modeling of outbreaks, clinical experience from countries affected by avian influenza, and preliminary results of vaccine trials.

The most interesting lecture was on non-pharmaceutical interventions during influenza outbreak (isolation, infection control, social distancing, school closure, travel restrictions etc). These interventions may delay/flatten outbreak peak, reduce the peak burden on healthcare system and basically buy some time.

Of note, CDC (USA) will soon update the guidelines on infection control precautions to be used to prevent the spread of avian influenza.

3. **Cost and cost effectiveness of infection control**

Estimating the cause of nosocomial infection is a challenge. The cost of infection control program in the average US hospital would equal the amount saved by preventing hospital infections, when ~6% of the infections were prevented.

Wenzel estimated that the cost of infection control program in a 250-bed hospital might be 2000 to 7000 USD per year of life saved. It compares favorably with many other approved treatments (CABG – 2000, pap smear every 3 years – 14000/year of life saved).

4. Sharing of learning experiences

The 46th Interscience Conference on Antimicrobial Agents and Chemotherapy (ICAAC) provided the latest breaking research and information.

Poster presentation on “¹Preoperative Chlorhexidine Shower or Bath for Prevention of Surgical Site Infection: a Meta-analysis” was shared with professionals and counterparts during the 46th ICAAC.

Results from the study revealed that Chlorhexidine Gluconate showering or bathing did not significantly reduce overall incidence of surgical site infections when compared with showering or bathing with soap or placebo and no shower or bath (RR=0.95, 95%CI=0.79 to 1.14) (M P Chlebicki et. al.). The results did not show significant benefit in the subgroup of patients undergoing clean surgery (RR=0.95, 95%CI=0.78 to 1.15) or in trials examining more than one preoperative Chlohexidine Gluconate shower or bath (RR=0.89, 95%CI=0.73 to 1.09) (M P Chlebicki et. al.).

The study concluded that meta-analysis of available clinical trials show no appreciable benefit of preoperative whole body Chlohexidine Gluconate showering or bathing for the prevention of surgical site infection. As the trials were sub-optimal in design, better-designed trials are needed.

5. Acknowledgement

I thank the Infection Control Association, Singapore (ICAS) for the sponsorship to attend this conference.

For any correspondence: Dr. Piotr Chlebicki, Changi General Hospital. Singapore.

¹ Piotr Chlebicki