Monthly Newsletter
April 2012

ANSORP *NOW*

CONTENTS :

Dear ANSORP Investigators

Greetings from Seoul !
I hope all ANSORP investigators are doing well.

This is the 2012 April issue of ANSORP NOW. It provides update information and current status of ANSORP activities. "ANSORP NOW" is a monthly newsletter, delivered to all ANSORP investigators by e-mail and website of APFID (www.apfid.org). Please read this ANSORP NOW carefully to update our international collaboration. If you have any ideas, opinions, or issues that can be shared with other ANSORP investigators, please send us e-mails or FAX.

I always appreciate your active participation in the ANSORP activities.

Jae-Hoon Song, MD, PhD
Organizer, ANSORP
Founder & Chairman, APFID

Current status of ANSORP studies

- **A prospective, hospital-based, multicenter surveillance on antimicrobial resistance and serotypes of *Streptococcus pneumoniae* in hospitalized patients over 50 years with invasive pneumococcal diseases or pneumonia in Asia**
  - Principle investigator : Dr. Jae-Hoon Song (Korea)
  - The study proposal is currently under review by Pfizer.

- **A prospective multi-center, multi-national serosurvey study for pertussis among children in Asian countries**
  - Principle investigators : Dr. Cheng-Hsun Chiu (Taiwan), Dr. Yae-Jean Kim (Korea)
  - The study proposal is currently finalizing by PIs after investigators' review and will be submitted to Sanofi-Aventis.

- **Surveillance and correlation of antibiotic prescription and Gram-negative bacterial resistance in Asian hospitals**
  - Principle investigator : Dr. Li Yang Hsu (Singapore)
  - The study proposal is currently under review by ANSORP Local Network Organizers (LNOs).

- **Antimicrobial Stewardship Programme (ASP) in Asia: Capacity Survey**
  - Principle investigator : Dr. David Lye (Singapore)
  - The study proposal is currently under preparation by PI.

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Publications of APFID

Fecal carriage of serotype K1 *Klebsiella pneumoniae* ST23 strains closely related to liver abscess isolates in Koreans living in Korea

Eur J Clin Microbiol Infect Dis. 2012 Apr;31(4):481-6

Chung DR, Lee H, Park MH, Jung SI, Chang HH, Kim YS, Son JS, Moon C, Kwon KT, Ryu SY, Shin SY, Ko KS, Kang CI, Peck KR, Song JH.

ABSTRACT

We determined the fecal carriage rate of serotype K1 *Klebsiella pneumoniae* in healthy Koreans and studied their genetic relationship with liver abscess isolates. We compared the carriage according to the country of residence.

The stool specimens were collected through health promotion programs in Korea. *K. pneumoniae* strains were selected and tested for K1 by PCR. Serotype K1 isolates were characterized by multilocus sequence typing and pulsed field gel electrophoresis. A total of 248 *K. pneumoniae* isolates were obtained from 1,174 Koreans. Serotype K1 was identified in 57 (4.9%), of which 54 (94.7%) were ST 23 and were closely related to the liver abscess isolates. Participants aged >25 years showed a higher fecal carriage rate than those ≤ 25 (P = 0.007). The proportion of serotype K1 out of *K. pneumoniae* isolates in foreigners of Korean ethnicity who had lived in other countries was lower compared with those who had lived in Korea (5.6% vs 24.1%, P = 0.024). A substantial proportion of Koreans >25 years carries serotype K1 *K. pneumoniae* ST23 strains, which are closely related to liver abscess isolates. Differences in carriage rates by country of residence suggests that environmental factors might play an important role in the carriage of this strain.

Interesting review papers

Meticillin-resistant *Staphylococcus aureus* (MRSA): global epidemiology and harmonisation of typing methods

Int J Antimicrob Agents. 2012 Apr;39(4):273-82

Stefani S, Chung DR, Lindsay JA, Friedrich AW, Kearns AM, Westh H, Mackenzie FM.

ABSTRACT

This article reviews recent findings on the global epidemiology of healthcare-acquired/associated (HA), community-acquired/associated (CA) and livestock-associated (LA) meticillin-resistant *Staphylococcus aureus* (MRSA) and aims to reach a consensus regarding the harmonisation of typing methods for MRSA. MRSA rates continue to increase rapidly in many regions and there is a dynamic spread of strains across the globe. HA-MRSA is currently endemic in hospitals in most regions. CA-MRSA clones have been spreading rapidly in the community and also infiltrating healthcare in many regions worldwide. To date, LA-MRSA is only prevalent in certain high-risk groups of workers in direct contact with live animals. CA-MRSA and LA-MRSA have become a challenge for countries that have so far maintained low rates of MRSA. These evolutionary changes have resulted in MRSA continuing to be a major threat to public health. Continuous efforts to understand the changing epidemiology of *S. aureus* infection in humans and animals are therefore necessary, not only for appropriate antimicrobial treatment and effective infection control but also to monitor the evolution of the species. The group made several consensus decisions with regard to harmonisation of typing methods. A stratified, three-level organisation of testing laboratories was proposed: local; regional; and national. The functions of, and testing methodology used by, each laboratory were defined. The group consensus was to recommend spa and staphylococcal cassette chromosome *mec* (SCC*mec*) typing as the preferred methods. Both are informative in defining particular strain characteristics and utilise standardised nomenclatures, making them applicable globally. Effective communication between each of the different levels and between national centres was viewed as being crucial to inform and monitor the molecular epidemiology of MRSA at national and international levels.

Fourteen years in resistance

Int J Antimicrob Agents. 2012 Apr;39(4):283-94

Livermore DM.

ABSTRACT

Resistance trends have changed greatly over the 14 years (1997-2011) whilst I was Director of the UK Antibiotic Resistance Monitoring and Reference Laboratory (ARMRL). Meticillin-resistant *Staphylococcus aureus* (MRSA) first rose, then fell with improved infection control, although with the decline of one major clone beginning before these improvements. Resistant pneumococci too have declined following conjugate vaccine deployment. If the situation against Gram-positive pathogens has improved, that against Gram-negatives has worsened, with the spread of (i) quinolone- and cephalosporin-resistant Enterobacteriaceae, (ii) Acinetobacter with OXA carbapenemases, (iii) Enterobacteriaceae with biochemically diverse carbapenemases and (iv) gonococci resistant to fluoroquinolones and, latterly, cefixime. Laboratory, clinical and commercial aspects have also changed. Susceptibility testing is more standardised, with pharmacodynamic breakpoints. Treatments regimens are more driven by guidelines. The industry has fewer big profitable companies and more small companies without sales income. There is good and bad here. The quality of routine susceptibility testing has improved, but its speed has not. Pharmacodynamics adds science, but over-optimism has led to poor dose selection in several trials. Guidelines discourage poor therapy but concentrate selection onto a diminishing range of antibiotics, threatening their utility. Small companies are more nimble, but less resilient. Last, more than anything, the world has changed, with the rise of India and China, which account for 33% of the world's population and increasingly provide sophisticated health care, but also have huge resistance problems. These shifts present huge challenges for the future of chemotherapy and for the edifice of modern medicine that depends upon it.

Interesting review papers (continued)

Accelerating resistance, inadequate antibacterial drug pipelines and international responses

Int J Antimicrob Agents. 2012 Apr;39(4):295-9

Theuretzbacher U

ABSTRACT

The pandemic of multidrug-resistant (MDR) pathogens and their continuing spread is beyond dispute. In contrast to the past, today's antibacterial research and development (R&D) pipelines are nearly dry, failing to provide the flow of novel antibiotics required to match the clinical challenges of the multidrug resistance (MDR) crisis. Concerned over the rapidly worsening potential global healthcare crisis caused by MDR bacteria and the lack of robust drug pipelines, several multinational campaigns have issued policy recommendations and have initiated broad discussion with a goal of stimulating the development of novel antibacterial drugs and technologies. These activities have resulted in intensified co-operation between the USA and the EU. The recently announced extensive 'Action plan against the rising threats from antimicrobial resistance' substantially ramps up action within the EU. In recognising the potential crisis caused by MDR and the limited treatment options, the European Commission decided on an unprecedented approach to drive the search for novel antibiotics by integrating the pharmaceutical industry, the research capacities of universities and small companies supported by public funding along with pricing/reimbursement and regulatory bodies. The European Commission has shown leadership and put action plans in place. Only the future will tell whether these initiatives will help curb the impact of the MDR pandemic.

The relationship between pneumococcal serotypes and antibiotic resistance

Vaccine. 2012 Apr 5;30(17):2728-37

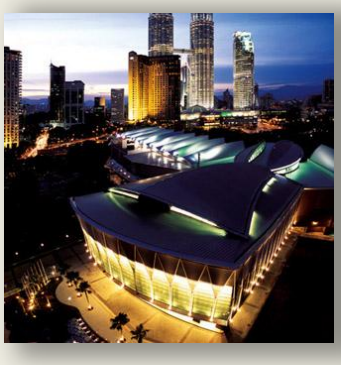
Song JH, Dagan R, Klugman KP, Fritzell B.

ABSTRACT

Streptococcus pneumoniae (SP) causes significant burden of disease, including invasive pneumococcal disease and noninvasive diseases such as pneumonia and acute otitis media. SP has at least 93 different capsular serotypes, with the various serotypes having different propensities for producing disease or developing antibiotic resistance. An increase in the prevalence of antibiotic-resistant SP serotypes has been observed globally. The objective of this paper was to examine the relationship between antibiotic resistance and SP serotypes, with a primary focus on studies published in the past 10 years. Changing trends in antibiotic resistance and serotype distribution during this time, including those before and after the introduction of 7-valent pneumococcal conjugate vaccine (PCV7), were analyzed. Factors that influence the prevalence of antibiotic-resistant serotypes include antibiotic selection pressure, the use of PCV7, and the emergence and spread of antibiotic-resistant clones. The emergence of multidrug resistant serotype 19A is of particular concern. Antibiotic-resistant SP is a global problem that must be addressed through multiple strategies, including national vaccination programs, antibiotic control programs, and ongoing surveillance.

If you need PDF version of the papers, please contact ANSORP Project Manager (Dr. So Hyun Kim, shkim@ansorp.org).

9th ISAAR 2013 in Kuala Lumpur, Malaysia in March 2013



Preparation of the 9th ISAAR 2013, which will be held at Kuala Lumpur Convention Center (KLCC) in Kuala Lumpur, Malaysia in March 2013, has been started.

We hope that you can take the opportunity to share your knowledge and expertise with other professionals at the 9th ISAAR 2013. We will do our best to provide you with interesting and valuable information on infectious diseases and antimicrobial resistance. We hope to see you all at ISAAR 2013 in Kuala Lumpur, Malaysia next year.

We always appreciate your active contribution to ANSORP activities.
If you have any questions, or issues that can be shared with other ANSORP investigators, please let us know them at any time.