

ANSORP NOW

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Dear ANSORP Investigators

Greetings from Seoul !

I hope all ANSORP investigators are doing well.

This is the **2014 July 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.



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Current status of ANSORP studies

• ANSORP Pneumococcal study

(PI : Jae-Hoon Song, Korea ; sponsored by Pfizer)

The study has been started since Dec 2013 (Nov 2012 in Korea) and is supposed to be completed by Nov 2015. Seven countries (Korea, China, Indonesia, Malaysia, Philippines, Singapore, and Thailand) are participating in the study. About 140 case has been enrolled in Korea so far. Thailand has started case enrollment while invitation of centers which are willing to join the study and IRB approval process in some centers are in progress in the other countries.

• ANSORP Pertussis study

(PIs : Cheng-Hsun Chiu, Taiwan & Yae-Jean Kim, Korea ; sponsored by Sanofi-Pasteur)

The study has been started since Oct 2013 and is supposed to be completed by Sep 2015. Ten centers in seven countries/areas (Korea, China, Japan, Taiwan, Thailand, Sri Lanka, and India) are participating in the study. About 870 cases have been enrolled so far (42% of target enrollment). We plan to complete case enrollment by the end of this year. The interim report will be presented at the ANSORP meeting which will be held in May 2015 in Korea.

• Capacity assessment of antimicrobial stewardship in the Asia Pacific

(PI : David Lye & Li Yang Hsu, Singapore ; sponsored by APFID)

Thanks to ANSORP investigators' contribution, the online questionnaire survey on antimicrobial stewardship (ASP) in hospitals in Asian countries were conducted from May to July 2014. The results of the survey may provide valuable information about ASP in the Asian region.

Interesting papers

Strategies to prevent methicillin-resistant *Staphylococcus aureus* transmission and infection in acute care hospitals: 2014 update.

Infect Control Hosp Epidemiol. 2014 Jul;35(7):772-96

Calfee DP, Salgado CD, Milstone AM, Harris AD, Kuhar DT, Moody J, Aureden K, Huang SS, Maragakis LL, Yokoe DS

PURPOSE

Previously published guidelines are available that provide comprehensive recommendations for detecting and preventing healthcare-associated infections (HAIs). The intent of this document is to highlight practical recommendations in a concise format designed to assist acute care hospitals in implementing and prioritizing their methicillin-resistant *Staphylococcus aureus* (MRSA) prevention efforts. This document updates "Strategies to Prevent Transmission of Methicillin-Resistant *Staphylococcus aureus* in Acute Care Hospitals," published in 2008. This expert guidance document is sponsored by the Society for Healthcare Epidemiology of America (SHEA) and is the product of a collaborative effort led by SHEA, the Infectious Diseases Society of America (IDSA), the American Hospital Association (AHA), the Association for Professionals in Infection Control and Epidemiology (APIC), and The Joint Commission, with major contributions from representatives of a number of organizations and societies with content expertise. The list of endorsing and supporting organizations is presented in the introduction to the 2014 updates.

Challenges of infectious diseases in the USA.

Lancet. 2014 Jul 5;384(9937):53-63.

Khabbaz RF, Moseley RR, Steiner RJ, Levitt AM, Bell BP.

ABSTRACT

In the USA, infectious diseases continue to exact a substantial toll on health and health-care resources. Endemic diseases such as chronic hepatitis, HIV, and other sexually transmitted infections affect millions of individuals and widen health disparities. Additional concerns include health-care-associated and foodborne infections--both of which have been targets of broad prevention efforts, with success in some areas, yet major challenges remain. Although substantial progress in reduction of the burden of vaccine-preventable diseases has been made, continued cases and outbreaks of these diseases persist, driven by various contributing factors. Worldwide, emerging and reemerging infections continue to challenge prevention and control strategies while the growing problem of antimicrobial resistance needs urgent action. An important priority for control of infectious disease is to ensure that scientific and technological advances in molecular diagnostics and bioinformatics are well integrated into public health. Broad and diverse partnerships across governments, health care, academia, and industry, and with the public, are essential to effectively reduce the burden of infectious diseases.

Variable recombination dynamics during the emergence, transmission and 'disarming' of a multidrug-resistant pneumococcal clone

BMC Biol. 2014 Jun 23;12(1):49

Croucher NJ, Hanage WP, Harris SR, McGee L, van der Linden M, de Lencastre H, Sá-Leão R, Song JH, Ko KS, Beall B, Klugman KP, Parkhill J, Tomasz A, Kristinsson KG, Bentley SD

ABSTRACT

BACKGROUND: Pneumococcal β -lactam resistance was first detected in Iceland in the late 1980s, and subsequently peaked at almost 25% of clinical isolates in the mid-1990s largely due to the spread of the internationally-disseminated multidrug-resistant PMEN2 (or Spain6B-2) clone of *Streptococcus pneumoniae*.

RESULTS: Whole genome sequencing of an international collection of 189 isolates estimated that PMEN2 emerged around the late 1960s, developing resistance through multiple homologous recombinations and the acquisition of a Tn5253-type integrative and conjugative element (ICE). Two distinct clades entered Iceland in the 1980s, one of which had acquired a macrolide resistance cassette and was estimated to have risen sharply in its prevalence by coalescent analysis. Transmission within the island appeared to mainly emanate from Reykjavík and the Southern Peninsular, with evolution of the bacteria effectively clonal, mainly due to a prophage disrupting a gene necessary for genetic transformation in many isolates. A subsequent decline in PMEN2's prevalence in Iceland coincided with a nationwide campaign that reduced dispensing of antibiotics to children in an attempt to limit its spread. Specific mutations causing inactivation or loss of ICE-borne resistance genes were identified from the genome sequences of isolates that reverted to drug susceptible phenotypes around this time. Phylogenetic analysis revealed some of these occurred on multiple occasions in parallel, suggesting they may have been at least temporarily advantageous. However, alteration of 'core' sequences associated with resistance was precluded by the absence of any substantial homologous recombination events.

CONCLUSIONS: PMEN2's clonal evolution was successful over the short-term in a limited geographical region, but its inability to alter major antigens or 'core' gene sequences associated with resistance may have prevented persistence over longer timespans.

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

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.