A large point-source outbreak of Salmonella typhimurium Phage Type 9 in Sydney, Australia, March 2007

T. Mannes¹, L. Gupta¹, a, A. Craig², A. Rosewell¹, C. Aimers-McGuiness¹, J. Musto², Q. Wang³

¹ Sydney South West Area Health Service Public Health Unit, Sydney, Australia
² NSW Health Department, Sydney, Australia
³ Centre for Infectious Diseases and Microbiology, ICPMR, Westmead, Sydney, Australia

Background: This paper reports one of the largest point-source Salmonella outbreaks in Australia.

Methods: Following initial notification of 5 cases who had purchased food from a shop, 319 cases were identified by active and passive surveillance through health care providers and laboratories. Using a standardised telephone questionnaire, we interviewed 283 people (89%). The questionnaire collected demographic data, exposure history and illness details. We confirmed symptoms of the other 36 cases by record review or clinician interview. Follow-up interviews were conducted on randomly-selected cases (n = 45) after 6 weeks to obtain information on illness duration and severity. Data were analysed using SAS version 9. A separate study of food handlers also reviewed food handling practices, collecting environmental and food samples. Eight food handlers were screened. Results of Salmonella cultures, phage typing and Multi-Loci Variable Number of Tandem Repeats Analysis were collated.

Results: The epidemic curve is at Figure 1. All cases ate food from the shop, with 312 consuming food purchased on one of 4 consecutive days. Incubation periods ranged from 1–118 hours (median 10 hours). Table 1 describes characteristics of cases. 43% required hospital admission. Follow-up interviews were conducted on randomly-selected cases (n = 45) after 6 weeks to obtain information on illness duration and severity. Data were analysed using SAS version 9. A separate study of food handlers also reviewed food handling practices, collecting environmental and food samples. Eight food handlers were screened. Results of Salmonella cultures, phage typing and Multi-Loci Variable Number of Tandem Repeats Analysis were collated.

Conclusion: This outbreak caused significant morbidity and high hospitalisation rates. It provides an argument for increased regulation of small premises that handle raw egg products.

doi:10.1016/j.ijid.2008.05.1190

69.011

Prevalence of Beta Hemolytic Group Streptococci Among Elementary School Children in Zanjan

B. Amini

Medical University, Zanjan, Iran (Islamic Republic of)

Background: Pharyngitis and rheumatic fever caused by Beta Hemolytic group A streptococci possess the prominent importance among common infectious diseases.

Since the carriers play an important role in its transmission among the susceptible individual, specially school child, this study was conducted to determine the prevalence of pharyngeal colonization of Streptococci among elementary school children in Zanjan.

Material and methods: The studying population include 1345 randomly selected school student from four different boy schools, each comprising of five standard grade, during spring 2005. Pharyngeal swabs were collected from each asymptomatic individual and subsequently cultured on blood agar media. Following incubation at 37 degree, with the help of morphological assay and standard biochemical tests, the visible colonies were examined for confirmative diagnosis.

Results: The prevalence of pharyngeal beta hemolytic streptococci was determined as 41%, in spied of difference in infection rate of different schools and grades, the statistical analysis, revealed no significant difference in obtained results from socioeconomic and demographic point of view.

Conclusion: The obtained results seeks a great attention toward implication of organized planning and schedules, in order to reduce the incidence of streptococcal pharyngitis and its proceeding sequels.

doi:10.1016/j.ijid.2008.05.1192

69.012

Meningococcal Disease Epidemiology in Asia

J. Leimkugel¹, L. Silva², G. Pluschke³

¹ Swiss Tropical Institute, Basel, Switzerland
² Novartis Vaccines and Diagnostics, Siena, Italy

Background: Awareness of meningococcal disease has increased in Europe, the Americas, and Africa, leading to the development and introduction of new meningococcal vaccine formulations. Despite repeated epidemics in many Asian regions, in particular China, with pandemic spread of hypervirulent clones, meningococcal disease epidemiology in Asia is only partially known.

Methods: We collected and reviewed studies and surveillance data on a national or regional level by performing searches on PubMed, regional WHO homepages, and the websites of the ministries of health with “meningitis”, “meningococcal disease”, “outbreak”, “incidence”, and the name of country as search phrases.

Results: Hyperendemic meningococcal disease of hypervirulent serogroup A clones was typical in China and parts of what was then the USSR (including Mongolia), which spread to the Indian subcontinent, until the late 20th century, and is being replaced by endemic serogroup B and

doi:10.1016/j.ijid.2008.05.1191
C disease. In contrast, very low meningococcal disease has been recorded in Japan and Taiwan in recent years, mostly caused by local clones (expressing B serogroup). Scarce data of disease incidence indicate moderate endemic incidence levels of up to 2 yearly cases/100,000 inhabitants in some near-eastern countries. Saudi Arabia reveals an interesting epidemiology, with usually low endemic disease rates disrupted by outbreaks in Mecca during the Hajj pilgrimage in certain years, most recently caused by serogroup W-135 in 2000 and 2001. Almost nothing is known of disease in South-East Asia and some regions of Central Asia.

Conclusions: Scarce data from most regions make Asian meningococcal disease epidemiology poorly understood. Yet, from the available data, trends in the different regions of Asia appear highly variable. Increasing mobility of man and recent global changes in the epidemiological pattern of meningococcal disease demand a comprehensive meningococcal disease surveillance to understand meningococcal disease globally and prepare for intervention strategies, ideally with broad protection by vaccination.

doi:10.1016/j.ijid.2008.05.1193

69.013

Epidemiological Characterization of *Clostridium difficile* Strains in Shanghai, China

H. Huang1, S. Wu1, M. Wang1, Y. Zhang1, H. Fang2, A.C. Palmgren2, A. Weintraub2, C.E. Nord1∗∗

1 Institute of Antibiotics, Huashan Hospital, Fudan University, Shanghai, China
2 Karolinska Institute, Karolinska University Hospital, Stockholm, Sweden

Background: *Clostridium difficile* remains the leading cause of nosocomial-acquired diarrhea. The number of outbreaks of *Clostridium difficile*-associated diarrhea (CDAD) that are severe or fulminant has risen markedly in many North American and European hospitals since 2003 despite breakthroughs in clinical diagnosis, effective treatments and infection control programs. However, there is still a paucity of epidemiological data on CDAD in China.

Methods: A 1-year prospective study of *C. difficile* infections was conducted in Huashan hospital in order to obtain an overview of the phenotypic and genotypic features of clinical isolates of *C. difficile*.

Results: Of 58 isolates from diarrhoeagenic patients with suspected CDAD, 46 were toxigenic: 36 were positive for both toxins A and B, and 10 were toxin A-negative toxin B-positive. All strains were binary toxin negative. The minimum inhibitory concentrations of 12 antimicrobial agents were determined using the agar dilution method. All strains were fully susceptible to metronidazole, vancomycin, meropenem and piperacillin/tazobactam. Resistance to moxifloxacin, ciprofloxacin, levofloxacin, erythromycin, clindamycin, tetracycline, rifampin, fusidic acid was found in 41.4%, 100%, 50%, 72.4%, 72.4%, 34.5%, 24.1% and 6.9% of the isolates, respectively. Co-resistance to erythromycin, tetracycline and moxifloxacin was found in 12 strains. Resistance to moxifloxacin or tetracycline was associated with resistance to erythromycin. Ten different ribotypes were identified by PCR, with four ribotypes (SH I, SH II, SH III and SH IV) accounting for 66.7% of the strains. None of them was the same as the strain BI/NAP/027.

Conclusion: The present study is the first China survey of *C. difficile* isolates from patients with CDAD. Ongoing epidemiological surveillance of cases of CDAD is required to detect clustering of cases and to monitor the emergence of specific highly virulent clones in China.

doi:10.1016/j.ijid.2008.05.1194

69.014

Massive Salmonella Poisoning in a Prefecture of Central Greece, Incidence Detailed Presentation

E. Vlachaki-Taveli1, A. Anastassiou1∗∗∗, P. Patra1, K. Katsiarani2, K. Kouraki1, D. Krikou1, E. Papadopoulos1, A. Gerovassili3, G. Mitsiou4

1 General Hospital, Volos, Hellenic Health System, Volos, Greece
2 Accident and Emergency Clinic, General Hospital, Volos, Greece
3 Biology and Genetics Department, Medical School, University of Thessaly, Larisa, Greece
4 Greek Society of Social Pediatric and Health Promotion, Larisa, Greece

Background: Salmonella is transmitted through infected food from animals or infected humans or infected subjects. Its culture time is between 6–72 hours. This study aims to give a detailed description of massive gastroenteritis infection due to Salmonella enteritidis (S.e.) in the prefecture of Magnesia among people of all ages and to evaluate the medical services of the Achillopoulou General Hospital of Volos (AGHV) in the instance of an emergency incident.

Materials and Methods: S.e. was transmitted to churchgoers of memorial services on the 23/5/04 due to consumption of infected boiled wheat that originated from the same patisserie and had the same infected ingredients. The collection of the necessary information was made mainly through the record books of the A&E, the microbiology laboratory, the hospital inflammation committee and the admission centre of the AGHV.

Results: 430 people (0–86 yo) with symptoms of gastroenteritis sought medical help at the AGHV with more than 500 visits in total between 23–26/05/04. 387 of these patients took part in the current study aged over 15 yo, 103 (26.6%) patients were hospitalialized specially of the ages over 60yo (39%). The patients sought medical help mainly on the second 24 h since the consumption of the infected food which is in agreement with the big size of the number of admissions on the 24/5/04 (53%). Median hospitalization time was 1–2 days (56.9% while only 5% needed to stay in the hospital for over 5 days. Patients who had had stool culture did not stay longer than 3–4 days.

Conclusions: The emergency incident put the AGHV personnel in a test to which they responded efficiently, promptly and successfully even though there was a system overload. It is also proven that in situations like these the