Poster Presentations - IMED 2018

Session 19 (Poster Presentations)
Late Breaker Abstracts
Saturday, November 10, 2018
11:45 - 13:15hrs

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19.001
Assessment of the Risk Posed to Singapore by the Emergence of Artemisinin-resistant Malaria

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Purpose: To assess the public health risk to Singapore posed by the emergence of artemisinin-resistant malaria across the Greater Mekong Sub-region (GMS).
Methods & Materials: The likelihood of importation of drug-resistant malaria into Singapore and the impact on public health of its subsequent secondary spread in Singapore were assessed to determine the overall risk. Epidemiology of malaria cases in Singapore was analysed. Vulnerability and receptivity of Singapore were examined, including the connectivity between Singapore and countries reporting artemisinin resistance (ART-R), as well as preparedness of the health authorities.
Results: The importation of ART-R malaria in Singapore is possible given the close proximity and significant travel volume between Singapore and the GMS countries reporting ART-R. Singapore's vulnerability is further enhanced by its high dependency on foreign workers from neighbouring endemic countries. Nonetheless, the overall likelihood of such an event is low based on the rarity and decreasing trend of imported malaria incidence over the past few years. From 2008 to 2017, 12 out of 209 (5.7%) *P. falciparum* cases detected in Singapore had mutations associated with artemisinin resistance. All cases had recovered without complications.
Conclusion: This risk assessment highlights the need for a high degree of vigilance over the local and global situation to be maintained to minimise the risk and severity of the public health threat of drug-resistant malaria to Singapore.

19.002
Possible drivers for the increased West Nile virus transmission in Italy in 2018.

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Purpose: To assess the consistency of the observed patterns of West Nile virus (WNV) during the last six years and possible drivers for the observed increased incidence in 2018.
Methods & Materials: The data on confirmed West Nile Neuro-invasive Disease (WNND) human cases notified in Italy since 2012 indicate an increase of incidence in 2018 (131 cases as of 30 August). An integrated surveillance system is in place in Italy since 2008, which includes RT-PCR testing of mosquito pools, birds belonging to three target species (magpie, hooded crow, jay) and wild birds of other species found sick/dead. Data from veterinary activities are recorded in a national database, which is integrated with the data on WNND human cases. The possible correlation between the monthly numbers of positive mosquito pools and the monthly numbers of WNND cases, of positive birds of target species, of positive wild birds since 2012 have been tested.
Results: The monthly numbers of WNND human cases, positive birds of target species and positive wild birds were all significantly correlated to monthly numbers of positive mosquito pools: Kendall correlation coefficients (tau) equal to, respectively, 0.6466 (p=5.6e-11), 0.6983 (p=4.3e-13) and 0.5548 (p=1.5e-8).
Conclusion: The variations of WNV infection in mosquitoes led to similar variations in the incidence in both the vertebrate reservoirs of infection (birds) and in the accidental hosts (human beings), thus supporting the hypothesis that the increased number of human cases observed so far in Italy in 2018 is linked to a higher incidence of infection in the mosquito populations. The analysis of climatic patterns in 2018 is indicating that during the first six months of this year the temperatures were higher than usual (+1.1°C), and also rainfalls were more frequent, especially during June (http://www.meteo.it/clima-italia-2018-pioggia-caldo-temperature/). These differences in temperatures and rainfall patterns in 2018 could explain the observed increased incidence of cases in vertebrate

20.021

Prevalence Of Antimicrobial Resistance In *Salmonella Spp.* Strains Isolated From Human In Kharkiv Region, Ukraine

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Purpose: To investigate the prevalence of antibiotic resistance in *Salmonella* strains isolated in epidemic foci of human Salmonella disease in Kharkiv region, Eastern Ukraine and to assess the changes in the antibiotic resistance rate in 2013-2016.

Methods & Materials: The samples were collected in foci of human Salmonellosis cases during 2014-2016. 3370 *Salmonella* strains were isolated according to The Clinical & Laboratory Standards Institute (CLSI) guidelines. Levels of antibiotic resistance were tested by agar disk diffusion method with 15 antimicrobial agents in 1570 Salmonella strains. The data was analyzed statistically using Microsoft Excel - 2016.

Results: We found an increase in the antibiotic resistance of *Salmonella* isolates, from 16,7 % in 2014 to 91,1 % in 2016. We observed resistance only to gentamicin in 2014, to ampicillin, doxycycline and gentamicin in 2015, to ampicillin, doxycycline, gentamicin, co-trimoxazole and tetracycline in 2016. Ampicillin resistance increased from 0% in 2014 to 42,1% in 2015 and 57,1% in 2016. Resistance to doxycycline varied from 0 % in 2014 to 16,8 % in 2015 and 8,9 % in 2016. For gentamicin proportion of resistant *Salmonella* strains ranged from 16,7 % in 2014 to 6,3 % in 2015 and 12,5 % in 2016. The isolates showed sensitivity to cephalosporins and carbopenems. Co-trimoxazole resistance level was higher than tetracycline resistance level (8,9 % and 3,6 % respectively) in 2016.

Conclusion: The resistance rate of *Salmonella* isolates was generally low for the most antibiotics in 2014 but prevalence of antimicrobial resistance in *Salmonella* strains was increasing. We observed the highest level of resistance for ampicillin and noted the widening of the spectrum of antibiotics to which resistance of *Salmonella* strains was developed.

Because resistant *Salmonella* strains cause more severe cases of disease and increase the risk of death it is very important to monitor the resistance development in *Salmonella* strains. The results of this study show the value of surveillance of the antibiotic resistance of *Salmonella* for the development of the regional guidelines for the selection of the rational antibacterial treatment of Salmonellosis cases in humans.