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Abstract No: 1696

Presentation at ESCV 2015: Poster 1
Antiviral use in Glasgow during influenza season 2014–15

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Background: Public Health Scotland released guidance during this influenza season regarding the use of antiviral medication in patients with suspected or confirmed influenza infection. Their recommendations, along with Public Health England and WHO, state that oseltamivir should be prescribed in all patients with severe disease consistent with possible influenza infection and in those at high risk of severe disease and displaying symptoms. Case definition of severe disease includes all patients requiring hospital admission. Guidance states antiviral medication should be prescribed immediately, and not be delayed by waiting for laboratory confirmation. Zanamivir is only recommended as first line therapy if there is a concern regarding gastrointestinal absorption, or the predominant circulating strain is likely to be oseltamivir resistant.

Methods: Using a large city centre teaching hospital, we looked at all inpatients during a 24 week period over winter 2014/15. 148 patients were PCR positive in throat swabs or gargles for influenza A virus during this period. Data was collected regarding their virology results, admission details, risk factors, disease severity and use of antiviral medication at all inpatients during the winter 2014/15. For the remaining samples. No Influenza virus, Parainfluenza virus, Respiratory syncytial virus, Adenovirus, Rhinovirus, Bocavirus, Coronavirus, Coxsackie virus, Haemophilia Influenza or Meningococci were detected in CSF, serum or stool samples. No Herpes simplex virus, Varicella-Zoster virus, Pneumococci, Haemophilus influenzae or Meningococci were detected in CSF, serum or stool samples.

Results: During our data collection 90.5% of patients were positive for influenza A serotype H3N2, and 3.38% for H1N1. Typing was not completed for the remaining samples. Using the guidelines outlined by Public Health Scotland, 85.1% of patients had risk factors for severe disease and 15.5% were immunosuppressed. Further, 87.2% had evidence of severe lower respiratory tract symptoms including hypoxia, dyspnoea and lung infiltrations. Of these patients positive for influenza A, 50.6% of antiviral prescriptions were empirical with only 57.4% of patients ever receiving treatment. The remaining cases were prescribed treatment following a positive virology result. The majority of treatment was started at day 1 (23.5%) with a range of 0–12 days following admission.

Conclusion: Despite national guidelines only half of the eligible patients were treated for their influenza infection. The reasons for low prescribing rates need to be investigated. This highlights an area in which clinician education and confidence can be improved.

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Presentation at ESCV 2015: Poster 1
Arbovirus seroprevalence in Nasiriyah Iraq

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Background: Arboviruses (arthropod-borne viruses) are spread by blood-feeding arthropods such as mosquitoes, ticks and sandflies. Arboviruses induce several emerging and reemerging diseases. The knowledge on arbovirus prevalence in Iraq is fragmental. In order to assess the burden of arbovirus exposure in southern Iraq, we determined the prevalence of IgG antibodies against the most common arbovirus groups.

Methods: Serum samples of 399 adult volunteers were collected in Nasiriyah, Iraq. The prevalence of IgG antibodies against the most common arbovirus groups were measured using immunofluorescence, haemagglutination inhibition and neutralization tests.

Results: Antibodies were detected against West Nile virus (11.6%), sandfly-borne Sicilian virus serocomplex (17.0%), sandfly-borne Naples virus serocomplex (7.5%), Sindbis virus (1.5%), Chikungunya virus (0.5%) and Tahyna virus (2.1%).

Conclusion: The results suggest that West Nile virus and sandfly-borne phlebovirus infections are common in southern Iraq and these viruses should be considered as potential causative agents in patients with febrile disease and/or neurological manifestations.

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Enterovirus or Metapneumovirus were detected in nasopharyngeal aspirations. Bacterial cultures on blood, CSF were negative. Antimicrobial treatment was therefore terminated. On the fifth day after hospitalisation, PM’s general condition rapidly recovered. His heart rate and respiratory rate became normal. Interestingly, HPeV-RNA was also found in stool and mouth swabs collected from PM’s 18-month-old brother. Sequencing and phylogeny analysis of HPeV VP1 gene were performed on the collected samples, which showed that HPeV sequences in samples from the both patients were almost identical, and belonged to HPeV-3. Our case further confirmed an earlier observation that HPeV-3, although generally brings about mild infections in elder siblings in an intrafamiliar transmission, may cause a much more severe infection in a newborn, such as sepsis-like illness.

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Presentation at ESCV 2015: Poster 1 Cytophagocytosis hepatitis and severe cytomegalovirus infection in immunocompetent patients

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Background: Primary cytomegalovirus (CMV) infection is met in children, young adults as asymptomatic disease or a self-limiting infectious mononucleosis. Severe CMV disease is well known in immunocompromised people, but has been rarely documented and no recommendations are established for its treatment in immunocompetent patients. Aim: to present a case of severe primary CMV infection in immunocompetent patient and analyse all primary CMV infection cases in the Infectology Center of Latvia (IIC) in the two year period.

Methods: Description of a clinical case and retrospective study of 31 adult patients with laboratory evidence of primary CMV infection hospitalised in IIC from 01.06.2012 until 31.05.2014. Case report: A 52 year old man without apparent health problems was hospitalised after 2 weeks of fever, bloody diarrhea, progressive malaise. Initially there were no specific findings and laboratory and imaging exams were done to exclude bacterial, viral infections, tuberculosis and malignancies. In the hospital patient developed pharyngitis, enantema and right side viral pleuropneumonia. At the 3rd week in hospital primary CMV infection was confirmed. Patient was still with fever, extreme malaise. Alanine aminotransferase (ALT) had increased from 86 U/l to 187 U/l; creatinine from 88 mM/l to 116 mM/l. Biopsy from colonoscopy showed cryptitis with crypt microabscesses and liver biopsy – a low intensity lymphocyte-macrophage infiltration. CMV-DNA (blood) was 6150 copies/ml. Patient received oral Valganciclovir 900 mg twice a day for 2 weeks with rapid normalisation of the body temperature.

Results: From 31 patient (all apparently immunocompetent) included in study (65% men) with mean age 34 (20–59) years. 65% (n = 20) had elevated ALT from 68 until 530 U/l; mean – 159 U/l. No other patients than the above described one had an other organ besides the liver involvement. 7 patients had hepatomegaly and 15 splenomegaly confirmed by ultrasonography; in all cases of hepatomegaly there was also a splenomegaly. Only fever was present in 35% (n = 11); in the rest of the cases there were various combinations of symptoms – pharyngitis, enanthem, exanthem, peripheral lymphadenopathy and cough.

Conclusion: Primary CMV infection in immunocompetent patients is usually a self-limiting disease with occasional cases of hepatitis, but not limited only to children or young adults. There is need for data about definition and use of antivirals for severe primary CMV infection treatment in immunocompetent patients.

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Abstract No: 1715

Presentation at ESCV 2015: Poster 1 Influenza H3N2 antigenic drift in hospital admissions with influenza during the 2014–2015 season in the Valencia Hospital Network for the Study of Influenza and Respiratory Viruses Disease, Valencia (Spain)

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Background: Preliminary influenza vaccine effectiveness (IVE) estimates in Europe and North America reported null to low IVE against confirmed influenza medically attended acute respiratory infection.

Methods: For vaccine effectiveness evaluation, we performed a test-negative study in ten hospitals that provided health care to 2,351,526 inhabitants. We enrolled consecutive consenting admissions of non-institutionalized, 18 years old or older subjects, with onset of influenza-like-illness (ILI) within 7 days of hospitalization. We obtained combined nasopharyngeal swabs and influenza was confirmed by RT-PCR. We considered a subject as immunized when vaccinated 15 or more days before ILI onset. We estimated IVE as (1 – odds ratio) × 100, unadjusted and adjusted, taking into account clustering by hospital and epidemiological week. Representative influenza positive samples were selected systematically, and the complete hemagglutinin gene was amplified by PCR and sequenced to identify amino acid variations from the vaccine virus.

Results: We enrolled 2713 admissions, 653 influenza positive (546 (84%), A(H3N2); 56 (9%) B Yamagata; 38 (6%) A no subtyped; and 4 (0.6%) B with no lineage), and 2060 influenza negative; 87 (19.5%) < 65 years old were influenza positive compared to 566 (25.0%) ≥ 65 years old; 158 (35%) < 65 years old were vaccinated compared to 1,559 (69%) ≥ 65 years old. Sequenced influenza A H3N2 viruses (n = 78) belonging to clade 3C.2 predominated (57/78, 73%), with the remaining isolates belonging to clades 3C.2a and 3C.3a (17/58, 22% and 4/78, 5%), respectively. Viral isolates showed seven (n = 54, 70%), eight (n = 19, 24%), nine (n = 2, 3%) or ten (n = 2, 3%) amino acid mutations in antigenic sites, either in isolates from vaccinated or unvaccinated individuals. Several of the amino acid mutations were located near the receptor-binding domain of the hemagglutinin globular head.

Conclusion: Low effectiveness of the 2014/15 recommended influenza vaccine against A(H3N2) viruses was most possibly due to mismatch, with a influenza season characterised by the circulation of A(H3N2) viruses distinct from the A/Texas/50/2012(H3N2)-like (clade 3C.1) vaccine virus strain.

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