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**0589**

## A single case outbreak of Nipah Encephalitis from India in May–June 2019

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**Background:** Nipah Encephalitis outbreaks have mostly been involving multiple patients; mostly close contacts like family members, Franceiends and healthcare workers from the hospitals. We report a case of Nipah Virus Encephalitis, which had a sub-acute presentation, had prolonged viral shedding with symptoms but no documented secondary cases in spite of many having prolonged and close contact with the patient.

**Case description:** A 21-year-old male was admitted with fever, altered sensorium and cerebellar signs of 12 days duration. A MRI showed multiple hypintense lesions in T2 images through out the brain parenchyma and the CSF, throat swab and Urine was positive for Nipah Virus RT-PCR. The urine remained positive for 3 weeks. He was treated with Ribavirin and Immunoglobulins and discharged well after 51 days of hospitalization.

Contact tracing of all the healthcare workers (HCW) and the care givers (family) who had come into close contact from admission to discharge was done.There were a total of 94 HCW contacts Seven HCW developed acute respiratory symptoms within the defined surveillance period. All of these symptomatic contacts were tested for Nipah virus (throat swab & serology) and were negative. Patient's mother and aunt who had cared for him though out his illness of 12 days before the diagnosis were also tested and were found to be sero-negative for Nipah.

**Discussion:** This is the second instance among the reported outbreaks where there was only one patient involved, the previous one being in 2009–10 in Rajbari, Bangladesh. This was in all probability a case with very low transmission capability, as even the close family members who cared for him for 12 days with out any precautions, and had exposure to urine, which was positive for Nipah, did not contract the disease. Absence of overt respiratory involvement in the late phase and possible strain differene could have contributed to low transmissibility both prior to hospitalization and during the hospitalization.

**Conclusion:** Transmission rates are not same for all strains of Nipah Virus. With only standard precautions, we can prevent outbreaks in these cases.

https://doi.org/10.1016/j.ijid.2020.11.079

**0590**

## Investigation into an annonymous, unclaimed Japanese encephalitis virus strain and, the biosafety and biosecurity lessons learnt.

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**Background:** Japanese encephalitis (JE) is caused by the mosquito–borne Japanese encephalitis virus (JEV). The transmission cycle of the virus naturally takes place between wild birds and *Culex tritaeniorhynchus* mosquitoes, with pigs often serving as important natural host due to the high and prolonged viraemia. In year 2009, while searching for specimens in a freezer located in an unsecured room, we stumbled upon a vial labelled as "JEV" with no record of its origin. This vial was treated as a risk group 3 organism and immediately sent to the biocontainment level 3 facility, according to the standard operating procedures, for further investigation.

**Methods and materials:** As a result of the vial label and to test the viability of the organism, the content was inoculated into Vero cell cultures and viewed daily for signs of cytopathic effect (CPE). A novel real time PCR specific for the NS3 region of JEV was designed to confirm the identity of the organism. Additionally, biosafety and biosecurity protocols were assessed and reviewed to address the storage of infectious materials in the laboratory.

**Results:** Cells began to exhibit CPE at day 4 post-inoculation. Melting curve analysis revealed that the real time PCR was specific and sequencing of the purified PCR product confirmed the organism as JEV (strain MY8662). Phylogenetic analysis showed that MY8662 and the Nakayama strain were genetically very similar, evident by the high nucleotide (99.68%) and deduced amino acid (99.88%) sequence similarities.The root cause of the unsecured vial was obscure inventory that failed to record specimens that could have been stored for decades. To this end, an access controlled room with ventilation was constructed to house all freezers storing infectious materials, coupled with an inventory system with barcodes on every storage vial. Additionally, inventory accountability was instituted for the tracking and transportation of infectious materials within and outside of the institution.

**Conclusion:** This unanticipated discovery of an unknown vial has precipitated the laboratory management to take significant measures to address the potential impact of the loss or intentional misuse of these agents. It is therefore, crucial to establish a sustainable culture of safety that involves every stakeholder in the laboratory.

https://doi.org/10.1016/j.ijid.2020.11.080

**0591**

## The increased risk of middle east respiratory syndrome coronavirus: Effects of the interaction between temperature variability and dromedary exposure

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**Background:** Environmental factors plays a very crucial role in the spread of infectious diseases especially those that are transmitted via pathogenic droplets such as MERS-CoV and Ebola. Recent data suggest a higher prevalence of MERS-CoV infection in dromedary camels in winter months compared to summer months within middle eastern countries. It is speculated that increase animal-to-human transmission in winter could exacerbate the putative human-to-human transmission via respiratory secretions. Therefore, this study focuses on investigating the effects of temperature variability and exposure to dromedary on the risk of MERS.

**Methods and materials:** Often, exposure to certain environmental factors produces effects lasting well beyond the exposure

period and with an increase in risk occurring from few hours to later in the future. In this study, we used time-varying distributed lag nonlinear models with doubly penalized spline to provide greater flexibility to the temperature-lag-MERS association. We also estimate the burden of the disease that can be attributed to temperature among patients exposed to dromedary camels.

**Results:** Preliminary results revealed that the optimal temperature for MERS in the study area was 27.2 °C. The increased risk of MERS associated with high temperature indicates that environmental and dromedary interactions at plays a significant role in the transportation of the pathogens.

**Conclusion:** Temperature variability in the winter months is associated with high risk of MERS as well as dromedary contact. MERS should not be regarded as seasonal infection because it occurs throughout the year, however the increased risk and timing of MERS peaks in lower temperatures clearly present a challenge.

https://doi.org/10.1016/j.ijid.2020.11.081

**0593**

## A case series on UCB seroprevalance of Human T-lymphotropic virus

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**Background:** Human T-cell lymphotrophic Virus 1 (HTLV)-1 is a delta retrovirus endemic in the Caribbean, parts of South America, West Africa, Asia, and Oceania. In the Caribbean, 2-5% of adults are infected. Breast feeding is the most common form of transmission.

HTLV-1 is an abbreviation for human T-cell lymphotropic virus type 1, also called human T-cell leukemia type 1, a virus that has been implicated in several kinds of diseases, including HTLV-1-associated myelopathy, and as a virus cancer link for leukemia (T-cell leukemia/lymphoma).

**Methods and materials:** The trial was conducted at Cord life Sciences Cord blood Bank from a period from 30 April2018 to 30th April, 2019.A total of 8400 umbilical cord blood donors were studied.

All subjects were counseled pre-donation about the all the serology tests that would be conducted. The cord blood was transported to the cord blood bank maintaining complete cold chain and our TAT of 72 hours was maintained without any exceptions during the trial. Each sample was tested by Chemiluminescence technology three times and the results were analysed.

Another fresh sample was then taken from the suspected subjects and tested via Chemiluminescence technology in the same setting as before. Thereafter results were analysed.

**Results:** 10 umbilical cord blood donors were positive (above cut off 0. 8 samples The repeat sample which were redrawn within 72 hours of previous sample collection were tested in the same setting under similar circumstances with the same kit batch and it too tested positive for all 10 samples.

**Conclusion:** HTLV-1 seroprevalence in adults is estimated to be at least 1–2% The main highly endemic areas are the southwestern part of Japan, some parts of the Caribbean and its surroundings regions.We recommend that mothers with positive or indeterminate supplemental test results have follow-up NAT. We recommend that mothers with positive or indeterminate supplemental test results have must be followed up on a priority basis Nucleic Acid Testing or Western Blot assay.

https://doi.org/10.1016/j.ijid.2020.11.083

**0594**

## Cancer incidence rates and trends in Addis Ababa, 2012–2016: Addis Ababa population-based cancer registry

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**Background:** Cancer is an emerging public health problem in Ethiopia as in other parts of Africa. The Addis Ababa city population-based cancer registry, established in 2011, is the only cancer registry in the country. In this paper, we describe cancer incidence rates and trends in Addis Ababa, Ethiopia

**Methods and materials:** I used all invasive cancer cases diagnosed from 2012-2016 in Addis Ababa population-based cancer registry. I calculated the cumulative risk of developing cancer and incidence rates and trends for the top 10 cancers by sex using CanReg5 and Join-point regression model. I also calculated the female-to-male incidence rate ratios and their corresponding 95% confidence intervals for the top ten cancers.

**Results:** From 2012-2016, a total of 11,438 cancer cases recorded in Addis Ababa, with 67% of the cases occurring in females and 33% of the cases in males. The three most common cancers by sex were breast (32%), cervix (14%), and ovary (6%) among females, and colorectal (12%), Non-Hodgkin's lymphoma (9%) and prostate cancer (7%) among males. By age, 55% of the cases in females and 47% of the cases in males occurred before age 50 years. The cumulative probability of developing cancer before age 75 years was 16.5% in females and 8.8% in males. Among the top ten cancers that occur in both men and women, incidence rates were higher in males than in females for five cancer types (colorectal, leukemia, NHL, oral cavity, and lung), though statistically significant for only NHL. In contrast, rates for breast and thyroid cancer were statically significantly higher in females than in males., overall incidence rates were stable in both males and females. Among the top ten cancer types, incidence rates increased for breast, cervix, colorectal, thyroid and stomach cancers in females and for all top ten cancers except for leukemia and NHL in males. During the corresponding period, rates decreased for only NHL in males.

**Conclusion:** Incidence rates in Addis Ababa are increasing for most cancer types in both males and females. These findings underscore the need for intensified efforts to enhance awareness of the cancer burden and implementation of resource-appropriate proven interventions.

https://doi.org/10.1016/j.ijid.2020.11.084