

An Overview of the Latest Infectious Diseases around the World

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Abstract

The present state of emerging and re-emerging infections around the world has resulted in panic and confusion. The loss of lives due to these infections is huge. Also, the absence of clear guidelines and definitive treatment due to the paucity of literature has instilled fear among the general public. In this paper authors discuss some of these infectious diseases that have led to a state of complete chaos in the recent past.

Keywords: Developing countries; Ebola virus; Swine influenza; Zika virus

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Introduction

The developing countries are facing a number of issues related to public health. There are a growing number of diseases that has led to panic and fear among the lay public. The situation is so grave that the emergence of certain diseases like Zika virus disease, swine influenza has resulted in total chaos. The reason could well be attributed to the absence of clear management guidelines for these diseases. Also, there is no preventive algorithm which could be followed to curb these infections well before they could lead to large scale morbidity and mortality. The current situation is alarming and demands action, especially in developing countries where the major part of the population earns very less and the commitment from the annual budget towards the health of the citizen is not substantial[1-3]. The present situation requires all the stakeholders, including the general public, government agencies, and private agencies, including the NGO's like HIFA2015, etc. to work in unison[4-6].

Ebola virus disease

The West Africa has been flattened by the Ebola virus[7]. The Ebola virus causes Ebola virus disease characterized by hemorrhagic fever[7]. And since its discovery in 1976 has claimed millions of lives with many still suffering[7]. The recent reports from the

WHO shows the presence of the Ebola virus RNA in the breast milk of affected mothers even after 16 months[8]. The disease has already created a situation of fear among the survivors and thus in this context the recent reports are gruesome. The disease has led to devastation huge number of lives. As per the CDC, there is no FDA approved vaccine for Ebola virus[9]. Thus the situation demands precautionary methods to be followed to prevent the transmission of this deadly disease.

Middle East respiratory syndrome coronavirus (MERS-CoV) infection

The MERS-CoV came into limelight with a report from the WHO about 1599 lab confirmed cases with 574 mortalities[10]. The disease is caused by a single stranded RNA virus of the genus Betacoronavirus. The virus has been found in bats, camels and humans. The paucity of literature has forced the authorities to advice for practicing utmost hygiene with control over droplet infections. The population with conditions like chronic lung disease, diabetes, renal failure, and immune-compromised individuals are considered to be at high risk[10]. There is no definitive treatment available for this infection and thus the precautions like hand washing, airborne infection control, including droplet control are some of the basics to be applied as advised by the WHO[10].

Swine influenza/ flu

The WHO declared the first pandemic of the 21st century in the year 2009, and it was swine influenza[11]. The present circulating strain of swine origin influenza virus of the H1N1 strain contains genes from the avian, swine and human viruses and has undergone triple reassortment[11]. Swine influenza is a highly

transmissible acute respiratory disease of the pigs and the transmission in humans occurs by inhalation or ingestion of droplets containing viruses from people sneezing or coughing; it is not transmitted by eating cooked pork products[2]. The disease has led to massive morbidity and mortality and even today there is no effective preparedness plan from the disease[2]. The winters come with a news of swine flu cases followed by complete chaos with large number of people suffering and ultimately the whole things stops when the summer season comes[2]. The lack of preparedness leads to huge losses of life[2]. The only way the disease can be prevented is by immunizing with the influenza vaccine [11]. But the vaccine takes time to boost the immunity which last only for a year thus there is no radical cure for the disease[2]. The role of antiviral drugs like Zanamivir (Relenza) and Oseltamivir (Tamiflu), if taken within 48 hours is said to be effective[2,11]. However, there are papers available in medical literature that has even questioned the safety and effectiveness of these drugs[12].

Zika virus disease

The disease is caused by a flavivirus which is an arbovirus belonging to Flaviviridae[13-16]. The disease was first isolated from Uganda in a rhesus monkey and since then the same has been isolated in other primates and even in humans[17]. The disease is caused by an RNA virus called as Zika virus (ZIKV) and is transmitted by infected Anopheles species[17]. The disease is actually a reemergence of an obscure virus found in the equatorial region[17]. The ZIKV came into limelight with the outbreak of manifold increase in the fetal birth defects notably microcephaly. The disease as such is a self-limiting disease with no casualties, but the situation in the pregnant women is different. The mother to fetal transmission of ZIKV could lead to fetal birth defects and this is based on the initial but limited findings reported by the amniocentesis findings in the newborns[17]. Besides, transmission by blood, urine, semen is also described in detail elsewhere[18-21]. There is a paucity of scientific literature on this disease and thus there is no definitive treatment options available[17]. The only way to protect is to refrain from mosquito bites[17]. The disease has led to total chaos and fear and this is based on the reports in which the afflicted countries have even requested the women to postpone pregnancy[17]. The CDC has issued interim guidelines to control ZIKV, but the same is not based on extensive research and is only based on the whatsoever cases available[22].

Conclusions

There is an urgent need to control the infections prevailing around the world. The role of surveillance is extremely important as the new infections are emerging. The efforts should be made to develop definitive management guidelines. If the actions are not taken, then

there will be a complete chaos and large scale morbidity and mortality.

The dissemination of healthcare information to all the sections of the society is warranted. Furthermore, the extensive research into the various aspects of the aforementioned diseases is also imperative.

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References

1. Yadav S, Rawal G. Counterfeit drugs: Problem of developing and developed countries. *Int J Pharmaceut Chem Anal.* 2015;2(1):46-50.
2. Yadav S, Rawal G. Swine flu-Have we learnt any lesson from the past? *Pan Afr Med J.* 2015;22:118.
3. Yadav S, Rawal G, Baxi M. Plagiarism-A serious scientific misconduct. *Int J Health Sci Res.* 2016;6(2):364-6.
4. Yadav S, Rawal G. Healthcare information for all-Is it achievable? *Int J Sci Res Rev.* 2015;4(1):101-5.
5. Yadav S, Rawal G. The HIFA and the Health Phone: Laying the foundation for combating malnutrition in India. *Int J Health Sci Res.* 2015;5(7):368-71.
6. Yadav S, Rawal G. Self-medication practice in low income countries. *Int J Pharmaceut Chem Anal.* 2015;2(3):139-142.
7. Yadav S, Rawal G. The current mental health status of Ebola survivors in Western Africa. *J Clin Diagn Res.* 2015;9(10):LA01-LA02.
8. WHO. Interim guidance. Clinical care for survivors of Ebola virus disease. Available from URL:- http://apps.who.int/iris/bitstream/10665/204235/1/WHO_EVD_OHE_PED_16.1_eng.pdf?ua=1. Last accessed 2016 on March 12.
9. CDC. Ebola (Ebola Virus Disease). Treatment. Available from URL:- <http://www.cdc.gov/vhf/ebola/treatment/>. Last accessed 2016 on March 12.
10. Middle East respiratory syndrome coronavirus (MERS-CoV) – Republic of Korea. Available from URL: <http://www.who.int/csr/don/25-october-2015-mers-korea/en/>. Last accessed 2016 on March 12.
11. WHO. Swine influenza in humans. Available from URL:- http://www.who.int/influenza/human_animal_interface/swine_influenza/en/. Last accessed 2016 on March 12.
12. Hata K, Koseki K, Yamaguchi K, Moriya S, Suzuki Y, Yingsakmongkon S, et al. Limited inhibitory effects of oseltamivir and zanamivir on human sialidases. *Antimicrob. Agents Chemother.* 2008;52(10):3484-3491.
13. Diallo D, Sall AA, Diagne CT, Faye O, Faye O, Ba Y, et al. Zika Virus Emergence in mosquitoes in Southeastern Senegal, 2011. *PLoS ONE.* 2014;9(10):e109442.
14. Wolfe ND, Kilbourn AM, Karesh WB, Rahman HA, Bosi EJ, Cropp BC, et al. Sylvatic transmission of arboviruses among Bornean orangutans. *Am J Trop Med Hyg.* 2001;64:310-316.
15. Duffy MR, Chen TH, Hancock WT, Powers AM, Kool JL, Lanciotti RS, et al. Zika virus outbreak on Yap Island, Federated States of Micronesia. *N Engl J Med.* 2009;360:2536-2543.
16. Gourinat AC, O'Connor O, Calvez E, Goarant C, Dupont-Rouzeyrol M. Detection of Zika virus in urine. *Emerg Infect Dis.* 2015;21(1):84-86.
17. Fauci AS, Morens DM. Zika Virus in the Americas — Yet another arbovirus threat. *N Engl J Med.* 2016; 374:601-4.

18. Marcondes CB, de Fátima Freire de Melo Ximenes M. Zika virus in Brazil and the danger of infestation by *Aedes* (*Stegomyia*) mosquitoes. *Rev. Soc. Bras. Med. Trop.* Dec 22, 2015 [Epub ahead of print].
19. Vasconcelos PFC. Doença pelo vírus Zika: um novo problema emergente nas Américas? *Rev Pan-amaz Saúde.* 2015;6:9-10.
20. Musso D, Roche C, Robin E, Nhan T, Teissier A, Cao-Lormeau V-M. Potential Sexual Transmission of Zika Virus. *Emerg Infect Dis.* 2015;21(2):359-61.
21. Foy BD, Kobylinski KC, Chilson Foy JL, Blitvich BJ, Travassos da Rosa A, Haddock AD, et al. Probable non-vector-borne transmission of Zika virus, Colorado, USA. *Emerg Infect Dis.* 2011;17(5):880-2.
22. CDC. Questions and answers for healthcare providers caring for pregnant women and women of reproductive age with possible Zika virus exposure. Available from URL: <http://www.cdc.gov/zika/hc-providers/qa-pregnant-women.html>. Last accessed 2016 on March 12.