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Editorial

FROM EBOLAVIRUS TO ECHOVIRUS

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Viral epidemics can be catastrophic to the human race and history attests to such outbreaks. Ebola and Ebola-like Filovirus es (belong to family of Filoviridae) are known to cause severe fatal haemorrhagic disease.

Even in countries where infectious diseases have been brought under control, epidemiologists are on the outlook for unexpected outbreaks. Nasty, "hot" viruses can be waiting around the corner. These diseases can catch us off guard if we remain complacent and manage outbreaks by crisis.

Do we need to have rainforests with monkeys to face an Ebola-like virus outbreak? The world has become a small community of nations by virtue of efficient communication and transportation facilities. Any businessman or tourist from the heart of Africa or any part of the world can land in any city outside his country.

All it takes for an outbreak is one patient who seems to be well but incubating a deadly virus. Some viruses may not be fatal but can spread fast particularly if airborne. Others that do not spread fast can be very virulent and may cause devastating diseases.

The last Zairian Ebola virus outbreak that lasted until August 1995 worked on its victims without mercy and put Kikwit on the news bulletins for 6 months. Historical outbreaks have stirred enough curiosity and concern and inspired authors who have written books dealing with Filovirus es. Factual stories written about outbreaks of these viruses refer repeatedly to Kitum Cave on the slopes of Mount Elgon in Uganda as a sanctuary of the possible reservoirs, but there is no scientific data to substantiate this claim.

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In contrast to Echoviruses where man is the only natural host, Ebola and Ebola-like Filovirus es (Marburg: Germany, Yougoslavia and Zimbabwe, 1967 outbreak; Ebola Zaire and Ebola Sudan 1975/1976 outbreak; Reston Ebola-like, USA 1989 outbreak and Ebola Zaire 1995 outbreak) have vertebrates, insects, spiders and reptiles as reservoirs in the tropical ecosystems[1-4]. In spite of tremendous data gathering ventures by WHO and other international agencies, the discovery of the exact source of Filovirus es, particularly Ebola, has eluded everybody[1,2].

In a manner similar to what AIDS virus does, epidemiologists believe that some Filovirus es can jump species.

The "hottest" Zairian type of Ebola virus outbreak occurred in September 1976 when it errupted simultaneously in 55 villages near the head waters of the Ebola

river and killed nine out of ten people it infected. This outbreak started within Yambuku Mission Hospital. The reason for the spread was thought to be use of unsterilised needles by well-meaning Belgian nurses (nuns). Some of these sisters paid for their act with their lives after acquiring the haemorrhagic viral disease from their patients. A similar, yet smaller, outbreak was reported from the southern part of the Sudan at about the same time when Zaire was struggling with its own[3].

Even USA has not been immune to introduction of a Filovirus within its borders. In November 1989 a virus related to Ebola was recovered from Philippines crab eater monkeys (Macaca facicularis) imported into USA. Luckily, it only caused sub clinical infection in workers handling and feeding these monkey colonies housed in the city of Reston, Virginia, about ten miles west of Washington DC. It took a concerted effort of the Centers for Disease Control (CDC) and a team of biohazard Army experts to put an end to the outbreak with minimal publicity[1,4].

TO ECHOVIRUS:

Over the last 4 months more than 150 cases of aseptic meningitis in children were admitted to Salmaniya Medical Centre. Preliminary viral studies done in France indicated that echovirus was the culprit.

Echovirus is a single stranded RNA virus that belongs to the group of enteroviruses. It is a relatively stable virus that retains activity for several days at room temperature. In addition, unrecognized infections are more common than clinical disease and this contributes to the spread of the virus. Humans are the only hosts of echovirus. It spreads from person to person by foecal-oral and possibly respiratory routes[4]. Swimming pools may serve as a means of spread of enteroviruses during the summer.

Aseptic meningitis is a common manifestation of enteroviruses. It is known to occur in epidemics and manifests as fever, pharyngitis, headache, vomiting and abdominal pain. Cerebro-spinal fluid examination frequently shows leukocytes with neutrophils predominance in the initial stage. Glucose level is normal and protein is normal to mildly elevated. In managing the outbreak several problems were faced. Lack of diagnostic laboratory facilities was a major problem. It took over 3 months from the beginning of the outbreak for identification of the possible pathogen. Specimens had to be sent abroad for viral isolation.

From public health stand point, an outbreak of a disease constitutes an emergency. Extensive epidemiological studies are needed to identify sources of infection and to plan measures for disease control. The outbreak started in June 1995 and up until October 1995 new cases were trickling in. To date we are not any wiser.

Among the questions raised by the public was whether swimming pools contributed to the spread of the disease. Most children are swimming in the several public and private pools around the country. Doctors and nurses had no answer to these public concerns.

The other obstacle faced by the medical personnel was due to many parents' reluctance to give consent for lumbar puncture. This is due to the misconception that spinal tap will cause permanent neurological deficit. This attitude forced doctors to keep patients in the hospital and give antibiotics for ten days. Patients could have been spared unnecessary exposure to these antibiotics had we had the diagnostic viral facilities within reach.

The Infectious Disease Ward at Salmaniya Medical Centre was crowded with Patients throughout the summer. Lack of adequate isolation facilities lead in

many occasions to sharing rooms with patients who were admitted for other causes. This, by no means, would have helped in controlling spread of the disease.

We believe that epidemiologists in the region, without creating undue panic, should present scenarios and design protocols for possible viral outbreaks. These scenarios should address issues related to virulent viruses that cause human fatalities and those that lead to morbidity only. Unavailability of diagnostic facilities for viral diseases is a major handicap and a source of frustration to the medical community.

Adequate hospital facilities to cope with epidemics are mandatory and could be cost-effective if properly planned.

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