

THE EBOLA VIRUS; PRELIMINARY  
THEORETICAL MOLECULAR IMAGING  
CONSIDERATIONS GIVEN TO THE  
POTENTIAL IMMUNOSTIMULATORY  
EFFECTS - ALLOGENEIC  
LYMPHOCYTES  
(Letter)

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**Abstract:** There is no known therapy for EHF. Late in the epidemic, this fact motivated a clinical experience with blood transfusions from survivors. However, this is no guarantee that this solves the problem if not possibly making it worse. Comparison with the bulk of patients in the outbreak, taking into account the patient's age and sex, the day of treatment, and the stage of the epidemic, did not suggest any real benefit to the therapy. In addition, virologic analysis of the incomplete specimen set that was available did not lend support for efficacy. It is questionable whether antibodies would have had much effect. However, in theory, in the event the activated Allogeneic lymphocytes and the added volume of platelets, erythrocytes, were probably beneficial. Whereas current examination of the Ebola virus under current microscopy instrumentation has failed to be able to examine the Ebola Virus, and examine it at small enough microscopic levels in order to understand its molecular biological activity. Therefore, this paper incorporates a microscopic imaging study at the molecular level in order so that the Ebola virus may be studied to see how in has interaction between molecules

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kin order to understand it better. In hopes to lead to better future treatments. If therapeutic studies are undertaken in patients in the future, it will be important to have randomized control serial laboratory samples and some consideration given to the potential immunostimulatory effects of Allogeneic lymphocytes.

**Key words:** Ebola, EHF, Infectious Diseases, CDC.

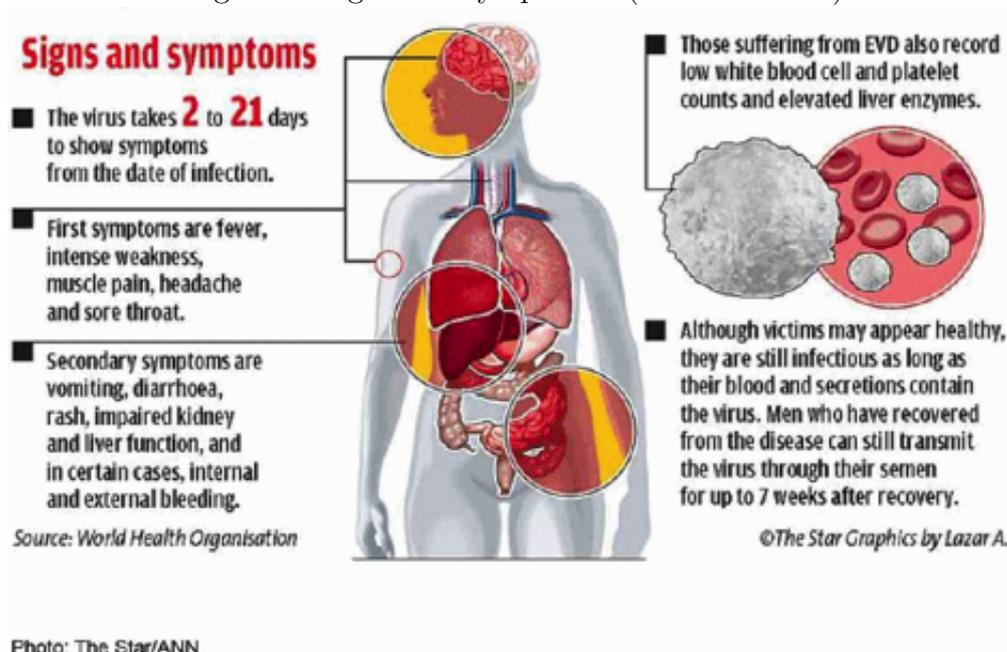
## 1 Ebola: The Virus and the Disease

Sanchez [9] brings to the readers attention that the introduction to the Ebola virus that there are very little if next to none known or in place maintenance strategies employed in nature by the agents, and we know much less about the resulting diseases, their pathogenesis, and detailed virology. The Ebola first known family of the only known virus family, and in the past their was a profound ignorance about it about which we have such profound ignorance. However, continued progressive research in the resulting diseases, their pathogenesis, and detailed virology, allowed much progress to be made in the progressive treatment of this disease over the years. Whereas during such efforts recent epidemics has provided considerable fundamental information about filoviruses. The fundamentals of this disease and their progress may be better understood and explained in Figures 1-3.

There are 4 distinguishable Ebola related subtypes, whose phylogenetic tree in which the resulting affects are shown in Figure 2. However, Sanchez [9], Peters [7] and Georges-Coubot [3] examines and goes into in depth comprehensive range of discussions and clinical trials in which experimental treatments and past medicines were examined to see if they could be improved to not only address the initial onset of this horrific disease, but to also help determine what could be done to help control the onset and control of these diseases as well. Because the subtypes, which may even be different virus species, have differing properties. Some of these may be traced through past experience several different and varying Ebola outbreaks over the last several decades. Some of these are as follows:

1. Ebola outbreaks of 1976; and
2. 1994-1996 as described under Figure 1.

Figure 1: Signs and symptoms. (Source: WHO)



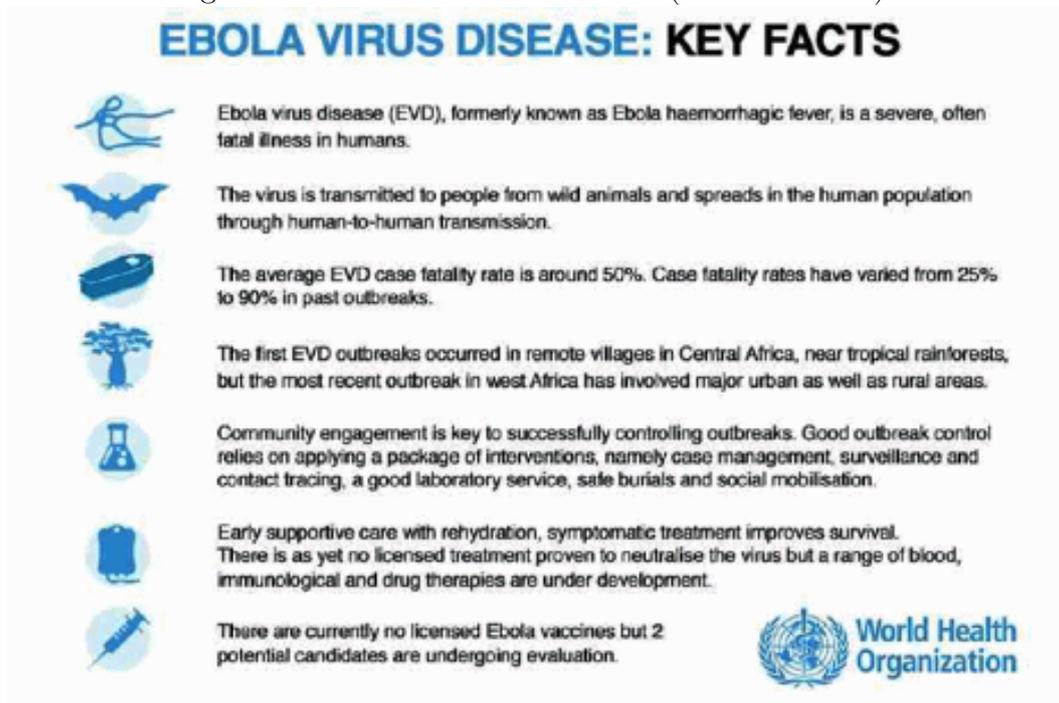
## 2 The Ebola Epidemics of 1994-1996

After Ebola hemorrhagic fever (EHF) appeared in Africa in 1976-1979, it was not seen again until 1994. The virus causing sporadic human infections that remained undetected because the patients never contaminated hospitals to produce the savage nosocomial epidemics. Careful and scrutinizing surveillance may have identified several cases and estimated the findings are subject to caveats because of problems with the validity of laboratory tests [5]. Serosurveillance in 1995 also suggested that human infections may have occurred from time to time [1]. Additional data and new evidence lead to the development of better understandings and treatment as discussed.

During 1994-1996, no less than five independent active sites of Ebola virus transmission were identified: Côte d'Ivoire in 1994 [1]; D.R. of Congo in 1995 [2]; and Gabon in 1994, 1995, and 1996 [4] [6] [8]. The previously known Zaire subtype of Ebola virus (EBO-Z) and the newly discovered Côte d'Ivoire subtype (EBO-CI) were both involved, and as in previous African Ebola virus transmissions, the sites were in or near tropical forests.

Which was followed by renewed human transmission, reflects actual Ebola virus activity or rather publicity combined with fortuitous entry of the virus

Figure 2: Facts about Ebola Virus. (Source: WHO)



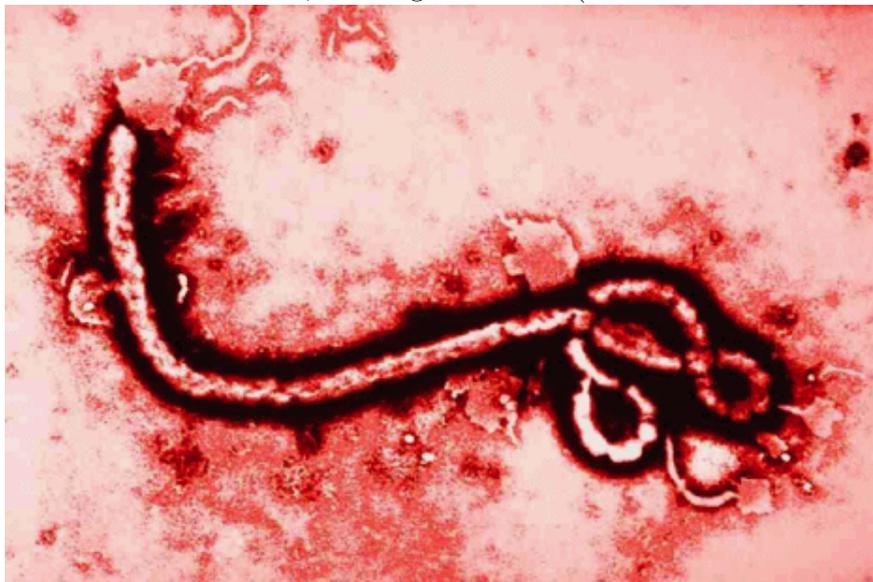
into medical facilities (leading to recognition) is unknown. Which other published papers trace the current outbreaks of allegedly some similar of the Ebola virus that had taken place in 2013-2014 as well.

EBO-Z was also circulating in Gabon [6], and at least 3 separate outbreaks in humans and nonhuman primates occurred. Thus, Gabon may well provide another site where the search for risk factors of human infection and the natural reservoir could be carried out. Notable among the epidemics were features such as the important role of a dead, naturally infected chimpanzee in bridging the virus to humans, the rapid control of human transmission when barrier-nursing measures were instituted and the continued circulation of virus without these precautions, and the deep forest exposures of index cases also discussed and assessed in Rowe article [8].

### 3 Preliminary Methodological Theoretical Molecular Investigation Using the Angstrom Microscope (AM)

A very limited fundamental imaging study on the above micrograph was accomplished to attain a greater examination of the molecular level of this disease. It was preliminarily determined at the pre-molecular level that the digenesis of this disease is more accelerated in theory than previously given the correct deterioration sequence digenesis situations and circumstances, past the onset of digenesis to where it appears that even the application of anti-bodies would not be a treatable option past a certain deterioration point. The first preliminary study was able to minimally study the virus at approximate 100.0 nm (nanometers). Therefore a much more durational study is needed at even smaller microscopic measurement scale levels. Which hopefully eventually would lead into potential important randomized control serial laboratory samples and some consideration given to the potential immunostimulatory effects of allogeneic lymphocytes could be an option in theory. However, more of this cannot be determined until a more advanced study is ensued with due diligence.

Figure 3: Ebola virus at 108,000 magnification. (Source: Fuse — Thinkstock)



## 4 Acknowledgements

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## References

- [1] BUSICO, K.M., MARSHALL, K.L., KSIAZEK, T.G., ROELS, T.H., FLEERACKERS, Y., FELDMANN, H., KHAN, A.S., PETERS, C.J. **Prevalence of IgG antibodies to Ebola virus in individuals during an Ebola outbreak, Democratic Republic of the Congo.** J Infect Dis 179(1):S102-S107, 1999.
- [2] BWAKA, M.A., BONNET, M.J., CALAIN, P., COLEBUNDERS, R., DE ROO, A., GUIMARD, Y., JATWIKI, K.R., KIBADI, K., KIPASA, M.A., KUVULA, K.J., *et al.* **Ebola hemorrhagic fever in Kikwit, Democratic Republic of the Congo: clinical observations in 103 patients.** J Infect Dis 1999;179 (1):S1-S7. 1999.
- [3] GEORGES-COURBOT, M.C., SANCHEZ, A., LU, C.Y., BAIZE, S., LEROY, E., LANSOUT-SOUKATE, J., TÉVI-BÉNISSAN, C., GEORGES, A.J., TRAPPIER, S.G., ZAKI, S.R., *et al.* **Isolation and phylogenetic characterization of Ebola viruses causing different outbreaks in Gabon.** Emerg Infect Dis 3(1):59-62. 1997.
- [4] KIBADI, K., MUPAPA, K., KUVULA, K., MASSAMBA, M., NDABEREY, D., MUYEMBE-TAMFUM, J.J., BWAKA, M.A., DE ROO, A., COLEBUNDERS, R. **Late ophthalmologic manifestations in survivors of the 1995 Ebola virus epidemic in Kikwit, Democratic Republic of the Congo.** J Infect Dis 179 (1):S13-S14, 1999.
- [5] KSIAZEK, T.G., WEST, C.P., ROLLIN, P.E., JAHRLING, P.B., PETERS, C.J. **ELISA for the detection of antibodies to Ebola viruses.** J Infect Dis 179(1):S192-S198, 1999.
- [6] MUPAPA, K., MUKUNDU, W., BWAKA, M.A., KIPASA, M., DE ROO, A., KUVULA, K., KIBADI, K., MASSAMBA, M., NDABEREY, D., COLEBUNDERS, R., *et al.* **Ebola hemorrhagic fever and pregnancy.** J Infect Dis 179(1):S11-S12, 1999

- [7] PETERS, C.J., SANCHEZ, A., FELDMAN, H., ROLLIN, P.E., NICHOL, S., KSIAZEK, T.G. **Filoviruses as emerging pathogens.** *Seminars in Virology*, 5:147-154. 1994.
- [8] ROWE, A.K., BERNOULLI, J., KHAN, A.S., MUKUNU, R., MUYEMBE-TAMFUM, J.J., BRESSLER, D., WILLIAMS, A.J., PETERS, C.J., RODRIGUEZ, L., FELDMANN, H., *et al.* **Clinical, virologic, and immunologic follow-up of convalescent Ebola hemorrhagic fever patients and their household contacts, Kikwit, Democratic Republic of the Congo.** *J Infect Dis* 179(1):S28-S35, 1999.
- [9] SANCHEZ, A., TRAPPIER, S.G., MAHY, B.W., PETERS, C.J., NICOL, S.T. **The virion glycoproteins of Ebola viruses are encoded in two reading frames and are expressed through transcriptional editing.** *Proc Natl Acad Sci USA*, 93(8):3602-3607, 1996.