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Ébola in TChM: Diagnosis, Principles of Treatment and Economical Analysis.

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ABSTRACT

In this research we go more deeply into EVD, studying the Etiology and realizing a Differentiation of Syndromes according to the systems: Wen Bing, San Jiao and Han Shan Lun. Later, a Treatment for Prevention, Symptomatic/Acute, and Remission phases is proposed. Finally, we study the economic effects of the epidemic in the most affected countries by stressing the importance of preventive health care and international aid, looking at the usefulness of Medical Matter for its low cost especially in the affected societies (that probably they will return to be).

Key Words: *EVD, Wen Bing, Epidemic, African economy, International collaboration, Ébola.*

INTRODUCTION

The Ebola Virus Disease (EVD) was very popular in Spain while there was an infected person. In Africa² the quantity of deaths ascends from the outbreak of December, 2013 until March, 2015 to 10.193.

We understand Ebola is a disease of global effects on the health and economic spheres. EVD has a fatality rate of 70 to 90%³, although its basic reproductive number (R_0) is low compared with other infectious diseases⁴ such as SARS, AIDS, or the Spanish flu of 1918, indicates that each infected person, on average, contagious to between 1.2 and 1.9 people for the duration of the same.

ETIOLOGY

In the EVS pathogenesis the fundamental thing is the assault of the Xie Qi. The (external) pathogen, not being canceled in the outer layer becomes:

1. Toxic Heat, 熱毒, Rè dú⁵.
2. Toxic Heat-Dampness, 濕熱毒, Shī-rè dú.
3. Toxic Heat in Blood, 血分熱毒, Rè rù xuè dù.

The Word "toxic" means all the things that may do severe harm to the body⁶. Epidemic factors are a group of pathogenic factor different from the Six External Pathogens. They are similar to the specific pathogens mentioned in Western

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² «Ebola Situation Report – 18-03-2015». OMS

³ <http://www.who.int/mediacentre/factsheets/fs103/es/>

⁴ Criado M.A. (8-10-2014). «La ratio de contagio del ébola es inferior a la del sarampión o el VIH». elpais.com.

⁵ FEMTCh (2011). Estándar Internacional Chino-Español. Nomenclatura Básica de Medicina China. Editorial Médica del Pueblo, Pekín, China.

⁶ Yubin & Chengcai (1998). "Concepts and Theories of Traditional Chinese Medicine". IOS Press Ohmsha, Beijing, China.

medicine. Epidemic factors are in fact a group of Heat pathogens with a strong capacity for causing diseases.

We speak about Heat for Excess: Toxic Heat (TH)..., high fever, thirst, sore throat and itchy eyes. The TH affects the dermatological area with swelling, redness, pus boils and carbuncles, but, already we're before Fire⁷.

Dampness-Heat (in the EVD) is Toxic, it's characterized by swelling, pain and usually pus, pustules, papules, vesicles and skin infection.

With TH in Blood, there's hyperactivity in the plasma, hence: ulcerations, irritations, hemorrhages, infections, etc. Sepsis is the systematic inflammatory response. What the patient needs is a product that acted as a cooler.

Chapter 72 Suwen says: "if there Zheng Qi inside the Xie Qi cannot affect", we think that though the virulence of Xie Qi is the highest, there would be necessary to improve Zheng Qi of people at risk.

DIAGNOSTIC METHODOLOGY

"Ebola symptoms are easily confused with other diseases, and it's difficult to find differences, especially early"⁸.

EVD⁹ symptoms:

- ⊙ Sudden onset of high fever.
- ⊙ Headache and chills (sometimes first symptoms)¹⁰.
- ⊙ Intense weakness.
- ⊙ Anorexia/Dysphagia.
- ⊙ Discomfort in joints and muscle pain.
- ⊙ Singultus (hypo).¹¹
- ⊙ Sore throat.
- ⊙ Diarrhea, vomiting/nausea, stomach pain and/or abdominal.
- ⊙ Appearance of a red rash.
- ⊙ Dyspnea.
- ⊙ Conjunctival congestion.
- ⊙ Alteration in renal/hepatic function.
- ⊙ Some internal and external bleeding.

At first EVD was named as Ebola Hemorrhagic Fever, with¹²: "general signs of bleeding"; nowadays Doctors affirm that there are patients who don't come to these symptoms. Though in the majority appear in the first days a "rash" generalized with petechiae (micro bleeding sub epidermal). Around the 10th, from the transmission¹³, it can cause bleeding or bruising without apparent cause¹⁴. For most in the final stage reddened eyes cry blood and blindness can

⁷ www.MaciociaOnline.com.

⁸ MSF. "Pushed to the limit and beyond"

⁹ OMS, <http://www.who.int/mediacentre/factsheets/fs103/es/>

¹⁰ <http://www.who.int/features/2015/ebola-health-worker-ireland/es/>

¹¹ Note: Although the Hypo does not appear in the official manuals, it appears in various medical documents, (Dr. Van Harp MSF).

¹² Arboledas Brihuega, D. (2013). Fiebre hemorrágica por Ébola. ED. Club Universitario, Alicante.

¹³ Reverte Coma, José Manuel, en:

<http://www.gorgas.gob.pa/museoafc/loscriminales/paleopatologia/el%20ebola.html>

¹⁴ U.S. Department of Health and Human Services, Centers for Disease Control and Prevention.

"Brote de la enfermedad del Ébola en ÁFRICA OCCIDENTAL". CS250531 – MLS250711.

occur. Dehydration is very fast. It bleeds through the pores, including nipples. The testicles take on a purplish and swollen appearance.

Whitish skin blisters mixed with red spots appear petechial. Kidney failure is a first important complication. The spleen becomes a single clot. The cerebral injuries produce softening originating stroke or convulsions that help to the diffusion for the whole room of the blood and the secretions. There are delirium and shock.

We follow three systems of differentiation of syndromes:

a) WEN BING.

Wen Bing (WB) based the *Re Xue Wen*¹⁵. WB posits that some pathogenic factors go beyond "Wind" (previous schools), giving the possibility of an epidemic.

The essential characteristics of the WB diseases are:

1. Symptoms and signs Wind-Heat in the early stages;
2. There is always fever;
3. Infectious/viral;
4. Wind-Heat penetrates through the nose and mouth;
5. The pathogenic factor is particularly strong;
6. Wind-Heat has a strong tendency to become Interior Heat;
7. On the inside, the Heat has great tendency to dry fluids.

This theory corresponds to viral infections such as Influenza or Ebola.

A. Wei Syndrome and EVD.

Main symptoms	Secondary symptoms
Fever	cough (rare in EVD)
Cold Wind light aversion Chills	Pain and swelling in throat
No/low sweating	Dry mouth, little thirst
Headache	chest tightness
Tongue: slightly red tip and edges, thin white coating	Nausea, yellow nasal discharge, slightly dark urine
Pulse: fast floating	Wind Heat, Dampness Heat possible

B. Qi Syndrome and EVD.

The Heat has penetrated in the Organs, Zheng Qi - Xie Qi fights loudly.

Main symptoms
high fever
Thirst, cold drink preference
red face
Agitation, irritability
Yellow, reddish urine
Tongue: red, dry yellow coating, thick possible
Pulse: fast and strong or undulating

¹⁵ Min Wen, J., Garry Seifert, G. (2000). "Warm Disease Theory - Wen Bing Xue". Ed. Paradigm Publications, Taos, EEUU.

Probable pathogenic Heat obstructing Lung, Heat that burns the Chest and Diaphragm or Heat suspended in Stomach and Intestines. While the language has coat, the patient is still in the level Qi.

C. Ying Syndrome and EVD.

In elderly can easily result in death. In YING, Heat affects Ying Qi, Heart and pericardium. There are Yin 's consumption and mental disorders.

Main symptoms
High fever (night)
Irritability, confusion
Macules
Tongue: dark red uncoated
Pulse: thready fast

D. Xue Syndrome and EVD.

Final phase. Heat, in the interior, injures the Yin, produces Yin 's collapse and loss of Liquids. It affects Heart, Kidney and Liver.

In addition:

- a. Disordered blood circulation.
- b. Bleeding/Haemorrhages.
- c. Internal Wind.
- d. Yin 's collapse.
- e. Yang 's collapse.

In EVD, Wind of Liver symptoms can appear: Convulsions, Cervical Inflexibility, Opisthotonos or Trismus¹⁶. In EVD predominates the Loss of Blood, because high fever, vomiting and black diarrhea are very representative. In EVD is produced burning of the caps Qi and Xue, as Zhang says¹⁷.

b) SAN JIAO.

It 's in Wu Ju Tong, "Systematic Identification of the Feverish Pathologies"¹⁸. Sanjiao explains febrile illnesses by Heat and by Dampness-Heat simultaneously. Phases: initial, intermediate and advanced. In the EVD:

- Superior Jiao Syndrome (SJ) includes the symptoms of Lung and Pericardium, Xie Qi passes SJ to MJ. Dampness-Heat in the SJ causes "Doughy dregs".
- Middle Jiao Syndrome (MJ) produces Heat that affects Yangming.
- Lower Jiao Syndrome (LJ) includes the symptoms of Kidney and Liver. In EVD we emphasize urinary and fecal retention; in addition convulsions, inflexibility, or tremor in the limbs: for dehydration of the tendons for Yin 's Insufficiency of Liver.

¹⁶ Vilamitjana, M.D. (2009). Diferenciación de Síndromes. Ed. ESMTTC, Amposta.

¹⁷ Zhang, Y., Li, W. and Zheng, M. "Chinese-English Chinese traditional medical word-ocean dictionary". Taiyuan: Shanxi People's Press; 1995.

¹⁸ Yan Bing & Yan Xiao Feng (2007). Wu Ju Tong. Ed. Chinese Ancient Books Publishing House, Shanghai.

c) SHANG HAN LUN.

Original of the Huang Di Nei Jing Su Wen¹⁹ and of Shang Han Lun²⁰. Ebola belongs to the Superficial Syndrome, transforming in an Internal Syndrome. EVD deals with functional hyperactivity of the organism, Excess, and Yang Syndrome.

According to the Jin Gui Yao Lue (Essential Prescriptions of the Golden Cabinet)²¹, the EVD is fitted as a disease in the designation "Yin-Yang Toxin".

PROPOSAL FOR INTEGRATION WITH THE "MODERN MEDICINE"

For the Treatment we take the EVD by Wen Bing School and approach the patient in three Phases:

- a) Prevention.
- b) Symptomatic/acute.
- c) Remission.

We complement the Modern Medicine, that in 06/2015, doesn't have an antimicrobial specific treatment (intravenous fluids and maintain electrolyte balance, maintaining oxygen levels and blood pressure, other infections that occur)²²; though advances are done in blood products²³, immunotherapies, medicaments and vaccines (WHO)²⁴. We emphasize the Prevention as an economic solution to a highly lethal virus in humans (not to mention that it can be used as a biological weapon)²⁵.

TREATMENT

TChM has approached for hundreds of years to similar diseases like EVD (SHANG HAN LUN (oc), BÉIJÌ QIĀNJĪN YÀOFĀNG²⁶, WĒNBÌNG²⁷, WEN YI LUN²⁸, HUÁNGDÌ NÈI JĪNG(oc), WEN RE LUN²⁹, WĒNBÌNG TIÁOBIÀN³⁰ and others).

¹⁹ Unschuld, P.U. (trad.) (2003). Huang Di Nei Jing Su Wen. Ed. University of California Press, London, England.

²⁰ Zhang Zhong-Jing (Tra. Mitchell, C., Yè, F. & Wiseman, N, 2014). Shang Han Lun on cold damage. Ed. Paradigm Publications, Taos, USA.

²¹ Zhang Zhong-Jing. (Tra. Wiseman, N. & Wilms, S. 2013). Jin Gui Yao Lue. Essential Prescriptions of the Golden Cabinet. Ed. Paradigm Publications. Taos, USA.

²² <http://espanol.cdc.gov/enes/vhf/ebola/treatment/>

²³ Mupapa K, et al. Treatment of Ebola hemorrhagic fever with blood transfusions from convalescent patients. J Infect Dis. 1999 Feb;179 Suppl 1:S18-23.

²⁴ <http://www.who.int/ith/updates/20140421/en/>

²⁵ Feldmann, H., et al. "Effective Post-Exposure Treatment of Ebola Infection". Plos pathogens, January 19, 2007

²⁶ Béiji Qiānjīn Yàofāng - Sūn Simiǎo.

²⁷ Wēnbìng in Wai Tai Mi Tao (Secrets of a Medical Officer) Wang Tao.

²⁸ Wen Yi Lun (Treaty Pestilences), Wu Youxing, d. Míng.

²⁹ Wen Re Lun (Treatise on Febrile Diseases), Ye Tian Shi.

³⁰ Wēnbìng Tiáobiàn (Systematic Differentiation of Febrile Diseases Caused by Heat), Wu Ju Tong.

We propose:

a) Phase prevention (at risk) (Yu Fang): To strengthen the Zheng Qi, to regulate the Qi/to cool the Xue.

☉ Du Huo Ji Sheng Tang + Moutan Cortex (Mu dan Pi).

b) Fase symptomatic/Acute: To support the Zheng QI and to help to the dispersion of Toxic Heat.

b.1. In the Phase WEI of the EVD - (Phase 1 WHO).

☉ Qing Qi Hua Tan Tang Modified (*It predominates Over Dampness*)
+ Radix Purariae - Ge Gen + Caulis phyllostachis in taeniis - Zhu Ru +
Radix Glycyrrhizae - Gan Cao + Cortex radices Mori alabae - Sang Bai Pi.

☉ Yin Qiao San Modified (*It predominates Over Wind*)
+ Radix Purariae - Ge Gen + Gypsum - Shi Gao + Rhizoma
Anemarrhenae - Zhi Mu + Radix Trichosanthis - Tian Hua Fen + Radix
Ledebouriellae - Fang Feng.

Not considering any type of acupuncture for three reasons:

1. The risk of infection and contagion is very high and not worth the treatment.
2. The effects will be very unrepresentative.
3. The process of blood coagulation is neutralized by the virus, for what the process acupuntural might help to drain the patient.

b.2. In the Phase QI of the EVE - (Phase 1 WHO).

☉ Bai Hu Tang Modified (*Patients of strong constitution*)
+ Rhizoma Anemarrhenae - Zhi Mu + Folium Lophatheri - Dan Zhu Ye +
Radix Ginseng - Ren Shen + Tuber Ophiopogonis - Mai Men Dong +
Rhizoma Atractylodis lanceae - Cang Zhu.
+ IF pain of joints³¹: Ramulus Cinnamomi cassiae - Gui Zhi and Rhizoma
Atractylodis - Cang Zhu.

☉ Pu Ji Xiao Du Yin Modified (*Predominant dermatological attack*)
+ Radix et Rhizoma Rhei Palmatum - Da Huang³².

b.3. In the Phase YING of the EVE - (Phase 2 WHO).

☉ Huang Lian Jie Du Tang Modified
+ Radix et Rhizoma Rhei Palmatum - Da Huang + Radix
Isatidis/Baphicacanthis - Ban Lan Gen + Gelatinum Corii Asini - E Jiao.

☉ Qing Ying Tang Modified
+ Radix et Rhizoma Rhei Palmatum - Da Huang + Flos Lonicerae
japonicae - Jin Yin Hua Rhizoma Coptidis - Huang Lian + Folium
Lophatheri - Dan Zhu Ye + Radix Salviae miltiorrhizae - Dan Shen
+ IF persistent high fever: Gypsum - Shi Gao.

b.4. In the Phase XUE of the EVE - (Phase 3 WHO).

☉ Xi Jiao Di Huang Tang Modified
+ Radix Scrophulariae - Xuan Shen + Radix Rehmanniae recens - Sheng Di
Huang

³¹ Junying, G. et al. (2000). Fórmulas Herbológicas Prácticas de China. Ed. En Lenguas Extranjeras. Beijing.

³² Sterckx, P. & Jun, Ch. (2004). Formules Expliquées. Ed. Presses Universitaires Guang Ming. Suisse.

- + IF vomiting blood: Bai mao gen: Rhizoma Imperatae y Ce bai ye – Cacumen Platycladi
- + IF bloody stools: Huai hua mi – Flos Sophorae, Zi cao – Radix Arnebiae.
- + Radix et Rhizoma Rhei Palmatum – Da Huang.
- ☉ Xie Xin Tang Modified
 - + Gypsum – Shi Gao + Gardeniae fructus – Zhi Zi + Ginseng Radix – Ren Shen + Radix Rehmanniae recens - Sheng Di Huang + Asparagi radix – Tian Men Dong.

And in general, if:

- * External pathogenic Heat, add: Gypsum - Shi Gao (without processing), Flos Lonicerae - Jin Yin Hua, Fructus Forsythiae - Lian Qiao, Radix Scutellariae - Huang Qin, Rhizoma Dryopteris - Guan Zhong.
- * Accumulation of Toxic Heat, add: Rhizoma Polygoni Cuspidati - Hu Zhang, Herba Hedyotidis seu Oldelandiae - Bai Hua She She Cao, Herba Scutellariae Barbatae - Ban Zhi Lian, Herba Solani Nigra - Long Kui.
- * Heat in the Blood and chaotic movement, add: Cortex radices Paeoniae suffruticosae - Mu Dan Pi, Rhizoma Imperatae - Bai Mao Gen, Herba seu Radix Cirsii Japonici - Da Xiao Ji, Nodus Nelumbilis - Ou Jie.

There have been proposals of interest that can get along with ours³³. Additionally, we have to consider Wen Bing formulas³⁴ and others.

b.5. Topical use.

Besides Gypsum praeparata (between applications) we propose:

- ☉ Fāng jì pèi wǔ/ Fāng jì zǔ chéng
- ☉ Lavados con decocción de Excrementum Bombycis Mori - Can Sha
- ☉ Zhi Yang Xi Yao
- ☉ Zao Shi Xi Yao
- ☉ Da Huang Di Yu Fen
- ☉ An Yi San Hao Zhi Jia Dina
- ☉ Jing Wan Hong³⁵

c) Phase of remission: To regulate the Zangfu, Qi and Xue, to strengthen the Zheng Qi.

Bu Zhong Yi Qi Tang + Si Wu Tang.

Habitually there are side effects³⁶: loss of vision³⁷, deafness, joint/muscle aches. Add Fructus Lycii or Rhizoma Ligustici Walichii in decreased visual acuity, or Flos Chrysanthemi - Ju Hua in deafness.

ECONOMIC ASPECTS

EVD not only has caused more than 10.000 deaths, has also led to a defeat for the weak health systems. Patients don't want to go to structures that have

³³ Zhou-An Yin, Yuan-Yuan He, Ling Long, Chen-Yu Luo, Le-Xi Wen, Jian-Jun Ouyang, Zhen-Yi Yuan. "Prevention and Treatment Idea of Chinese Medicine on Ebola Hemorrhagic Fever". Journal of Acupuncture and Herbs 2 (2014) 55-62.

³⁴ Qu Xing, "Wen Bing formulas for inflammatory skin disease". The Lantern J., Vol. V, Iss. 2, Art. 8.

³⁵ Shumei Jin, et al. "The Efficacy of Jing Wan Hong Ointment for Nerve Injury Diabetic Foot Ulcer and Its Mechanisms". JDR, Vol. 2014.

³⁶ http://elpais.com/elpais/2015/05/12/ciencia/1431419461_358467.html

³⁷ Jay B. Varkey, et al. "Persistence of Ebola Virus in Ocular Fluid during Convalescence". N Engl J Med; 372:2423-2427 June 18, 2015.

proven ineffective; this has caused an increase in the epidemic³⁸. This problem, as stated Amador Gomez³⁹, concerns to Guinea, for example, endemic zone of cholera and malaria.

To make matters worse, there is a sharp increase in cases of measles⁴⁰ and other infectious diseases in children between 9 months to 5 years, for interrupting vaccination because of Ebola.

EVD has left the affected countries in high poverty: an average family reduced from two to one daily ration of rice; it has fallen fish intake and farmers eat the seeds and are being-school children (oc).

According to Gomez, EVD is not an epidemic that finishes now, but will be repeated outbreaks, especially in Guinea and calls to establish "contingency plans and incorporate the scenario of Ebola within health strategies of the affected countries".

According to Sancristoval (MSF, Coordinator Ebola)⁴¹, "if they had taken a number of decisions in time the disease would not come to take the magnitude that has finally taken". Sancristoval asked not stop paying attention to Ebola.

Although it seems that EVD is eradicated, this is not exactly true, as data,⁴² in the week 16-22/03/2015, there have been seven sanitary ones infected in Sierra Leone, a place with very sanitary few ones; and Guinea continue to raise 25% cases⁴³. Dr. Martínez⁴⁴ says "the appearance of new outbreaks in areas that have been heavily affected was predictable, and should act."

EVD 2015⁴⁵ continues to paralyze the economies of Guinea, Liberia and Sierra Leone; although transmission rates show slowdown. It is estimated that these countries lose at least US \$ 1.6 billion in economic growth in 2015 due to the epidemic.

Severe involvement in the economy of these countries requires the world to remain vigilant. Until it does not happen in each of the affected countries, the persons and the economies of the region will continue being in risk⁴⁶. It is important, now more than ever, maintaining aid to countries in risk, and we believe that the TChM Formulas are an economic contribution to this people, furthermore if one teaches them to cultivate the plants.

³⁸ Dos Santos, S., Country Director of "Action Against Hunger" in Guinea-Conakry since 2013, www.accioncontraelhambre.org.

³⁹ Amador Gómez, Technical director of "Action Against Hunger" in RNE, R5, 23/03/2015, 21:00.

⁴⁰ <http://www.aaas.org/news/science-measles-risk-growing-countries-hit-ebola>

⁴¹ www.msf.org (03/2015)

⁴² msf.com

⁴³ www.ffomc.org

⁴⁴ Martínez, J., en Madrid, 26 de mayo de 2015 (medicosypacientes.com/A.G.)

⁴⁵ <http://www.bancomundial.org/es/news/press-release/2015/01/20/ebola-most-african-countries-avoid-major-economic-loss-but-impact-on-guinea-liberia-sierra-leone-remains-crippling>

⁴⁶ <http://www.bancomundial.org/es/topic/health/brief/world-bank-group-ebola-fact-sheet>