

## Research article

# Dormant and Subclinical Bacterial Infections of Brain May Be the Cause behind All Epilepsies Including That Due To Post-Traumatic or Associated with Space Occupying Lesion SOL

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## Abstract

According to my work, epilepsy in all categories is due to one fact. The medical therapy in all modalities is away from this fact. If we extend our vision a little bit towards the patient as a whole we may see this fact more crystalline. I concentrated the search to find other symptoms and signs in all epileptic patients, I came to a conclusion that epilepsy even it is a post traumatic is a complication of a general systemic chronic bacterial infection, this clinical picture is in a vast number of patients for the last ten years of my routine work included both genders and all age groups is going with chronic Brucellosis, so, epilepsy is one feature of a chronic or sub acute active bacterial encephalitis.

**Keywords:** Epilepsy, Seizure, Brucellosis, Neurobrucellosis, Salmonellosis, Borreliosis, Encephalitis, Resistant Epilepsy, Intractable, Refractory, Uncontrolled, Heisenberg, Comparative Pathology, Biological Memory of the Body, Intracellular Bacteria, Oncogenesis, Companion Phenomenon/A, Active Dormancy, Admiration Prevents From Increment

## Introduction

Epilepsy is a brain uncontrolled electrical event, with a complex or simple cascade/s of mechanism/s motor, sensory, behavioral or mixed. Neurons alone or glial cells have a role! Since the ancient date epilepsy called THE GRAND MAL and THE PETIT MAL which are vague terms mean the great or big disease and the small disease for a vague nature of a terrifying medical and social health disaster. Since that many and many myths tried to find explanations to what happen both on causation and remedy level, but no convincing answers. Today, with the advancement in many disciplinary aspects in diagnosis and therapy we could find the same of old days where NO agreed explanations for causation and therapy. Today the medical and surgical treatment is directed NOT to the causation. Scientists agreed to declare the most of it as

unknown and the minority portion given causes, in fact the nature of these causes is a classification rather than a real causation, like post traumatic, brain tumor or infection like meningitis.

As a neurosurgeon, I had a ambition to open a unit for surgical treatment of epilepsy in our department like those in other parts of the world. I started my personal efforts to make myself wider and deeper knowledgeable in this field. This maneuver yielded in interpretation of a FACT that epilepsy, simply is a global brain dysfunction GBD the burden of it may be more in this or that part of the brain to be presented as a certain mode we term it with some known clinical entity. As results to this fact, epilepsy to be launched clinically it needs: 1, A- time to reach or exceeds certain threshold, by this it had been called "idiopathic". and/or 1, B- it needs an added precipitating factor/s like head trauma, by this it termed "post traumatic". Result 2, this GBD has other potential (needs added factor like riding a car or the sea in the motion sickness) or overt central clinical signs and symptoms if we put them in our consideration this fact will become clear or explains why patients with epilepsy suffers from chronic head ache, vertigo, memory impairment, weakness in concentration and many others. In short, I want to say "epilepsy is not the only one who sits on

the sofa" it over-rides the other manifestations both socially and clinically! Another FACT, this GBD is a complication or secondary to a chronic general systemic illness GSI. Again, as a result to this fact, you may find from the; 1- History of symptoms refer to a systemic chronic or sub acute infectious disease, the patient, may had been treated for. 2- Systemic review referring to a general chronic health problems. 3- Thorough physical examination picks up what refers to some long standing sufferings however mild. 4- Investigations are of some controversy, where the serology in its entire spectrum is not going with the highly successful clinical trial treatment as chronic Brucellosis. PCR in this study went in two lines, the second is very encouraging.

## **Patients and Method**

An abstract which was presented in the first international conference of epilepsy and treatment Baltimore, USA Sept. 2015, I mentioned the number of patients In this study was more than a hundred in a period of 2004-2014 with trial treatment on the bases mentioned above with almost 100% positive response, plus fifteen cases underwent PCR examination where this test became available in Iraq in the first half of 2015. This > 100 patients is not a selected group, it is, any patient with any kind of epilepsy, all age groups, both genders in the areas where I worked Iraq, Jordan (2006-2007) and Libya (2007-2008) are subjected to a strict history taking, systemic review, physical examination and lab work as if we are looking for a something outside the chief complaint which is epilepsy to obey the above mentioned philosophy. Patients whether are newly discovered, with no antiepileptics are given yet, or are already on antiepileptics and controlled, but they came seeking my advice for many causes, or uncontrolled whatever the quality and quantity of antiepileptics they are on. Things where changed in the last two years 2016-2017 towards any patient have to be subjected to PCR tissue study neither blood nor CSF because both showed weak correlation to the anti neurobrucellosis trial treatment results. Tissue biopsy is indirect (not neural tissue due to infeasibility) one, it passed in two stages, first stage we take an open biopsy from the area of sacro-iliac joint because it is mentioned that chronic brucellosis make pain and tenderness in this area but according to the results which low as 25% positive however they are astonishing to the others we moved to take open muscle biopsy from Trapezius where it is clinically involved in chronic Brucellosis. Of course this is a three sided cooperation, the patient's family, the patient (if he is old enough to decide his line of treatment) and me. If the family and the patient agreed on this philosophy after a discussion as same as I am writing here we start the treatment with close observation from the family and the patient himself if any with two to four weeks interval visits for evaluation and next stage antimicrobial choice or any other comments or instructions. Family role is crucial in conveying the real picture of the treatment with standing on application of instructions to the patient. These instructions are

very vital in aiding the treatment success where they are dietary and behavioral and the antiepileptics tapering after positive signs of improvements appear. Dietary instructions are as follows: no spices except turmeric, synthetic feed and drinks, Banana (either it encourages the allergy with the antimicrobials which is common in our community or it has many neurotransmitters brings in this or that route) finally the native or domestic dairy products like cheese and cream where these products is a well-known source of Brucella in many communities, the unfortunate of this is I did not test for this through my work after entering of PCR in the service may be due the shortage of financial support). The behavioral instruction is: no smoking, avoid synthetic perfumes, avoidance of much exposure to screen gazing like TV, PC or similar, tea and coffee, late sleeping and hunger.

## **Results**

I became capable to use PCR in my work in the beginning of 2015, so in pre- PCR phase the outcome of anti-neurobrucellosis treatment based on clinical bases obeying the concept of looking for the other evidences accompanying epilepsy that refer to a clinical disease the epilepsy is one complication to it, the results where 100% positive in preventing the seizures in those who are newly diagnosed without antiepileptics, and so with those who are already on antiepileptics but controlled. Mild, moderate and severe or resistant cases nicely respond in a relative short time after ensuing treatment of antibrucella (we do not in need to mention anti epileptics will be withdrawn gradually after the establishment of positive effect). My uncle is a PhD in veterinary medicine and surgery from one of USA universities now working in one of Iraqi universities, as I use to discuss with him this issue of zoonosis he objected my claims of 100% response strongly, not to invalidity, but to absolutely speaking. I reply on him, I know but what shall I say in case the results are so!!! The other or the accompanying symptoms and signs vanish too gradually which support the origin of this vision. All traditional or standard lab work had been done with very weak correlation to the results of trial treatment. These are serology of blood and CSF including ELIZA which showed 20% positive. When PCR was entered in the service we started with blood samples which also showed weak results, as Brucella is an intracellular bacterium I started to take tissue biopsy from the area nearest to sacroiliac joint as it is involved in the inflammatory process in chronic brucellosis. In one case remarkable hypertrophy of this joint's synovial membrane was found. The results with PCR in 15 patients in the first half of 2015 was 33% (5 out of 15) positive in blood samples. 66% (10 out of 15) in CSF and 66% (10 out of 15) from the connective tissue around sacroiliac joint. As we proceed until March 2017 I changed the biopsy site become taken from Trapezius muscle where many suffers from pain and tenderness in this region got relief when we I treat them for this concept so it means the complaint is due to chronic or acute or chronic

myositis. The results jumped in 30 patients to 80% out of 30) from the second half of 2015 to March, 2017 the time of writing these words, in a time all of these 30 patients had dramatic control.

## Discussion

It is logic that epilepsy (as a disease) is not a solitary event in the human body to precipitate seizure (event) of any kind and strength. If we look for other symptoms and signs concomitantly present we conclude that epilepsy is a companion phenomenon to a well known medical entity. Based on this simple thinking, epilepsy is a result or a complication. What made this? Made by the fact, of considering the epilepsy patient as a whole or one entity. Looking for the findings in history and the physical examination is not enough at all because when it become advanced this complication which is the epilepsy could be practically a solitary, which opposes out what had been said in the beginning of this discussion. Also the routine history and systemic review if not aided with a leading questions to pin point the deep past events that sometimes the patient if he is old or his family had forgot or consider it not related, so omit it, an instance on that, patient had spine pain and tenderness at the level of inter-scapular region continued to a certain period and disappeared, this could happened 10 years ago, more or less. Or a period of malaise and intermittent fever. You can hear from the most expert and also from the lay man or woman that our life is full of such transient happenings, if we put in our mind, we will stop! Here I like to say something about what can be called the “biological memory of the body” this system is not the biological o’clock or it stores the memory of events the body subjected to. No, it is a store for the events themselves, the pathologies. It means the declare was an alarm to some harming event, by some way this harmful event changed its behavior to not to elicit the alarming system (neural or immune) any more but this harming event still acting to destruct slowly and silently. It is like what we refer to as long standing active dormancy or chronicity. I used to say a tooth with carries if not aches it does not mean it is healthy, in most cases carries keep on increment but silently, the same is elsewhere in the body, the difference other parts of the body are hidden not seen as the tooth, so we can borrow this for others, surely epilepsy as a clinical outcome occurs after the chronicity of disease exhausted the body control systems. For that a concept of “comparative pathology” could explains and make us understand many if not all diseases according to simple and common events like conditions of teeth where they are very familiar to all populations if it aches during mastication it means tooth is inflamed or more accurate it is infected, otherwise one can breaks a nut with his teeth if they are sound. The same is true, any ache or error in the body is infection. Another gain of this concept, if any post-traumatic persistent aches continue for a long, it is infected pre-hand, and it was in a state of chronic or sub acute bacterial inflammation. I think as a philosophical attitude the only what is affecting

the body of us is the microorganisms alone; it means they create the tumors, so no tumors in the story. Physical circumstances that yield disease are precipitating factors, either lowers the immunity, breaks the anatomy or both. The later aspect or concept is interchangeable and it needs more than a stop on its role other than here. From the above, if we take the other symptoms and signs the patient have other than the seizures and we plot an X-Y coordinates as if they are a mathematical dots and plot with these dots a graph passes in each we will have an equation of a line or coordinate referring to an entity, this entity in medicine called a disease. So the epilepsy is not the disease, it is not the grand mal or the big disease! It is the off spring not the grandfather. If we think in such way, and apply, results will be no antiepileptics and control of resistant or refractory cases those already on antiepileptics. I do not in need to tell to date, antiepileptics, how act! Because these words are directed in part to whom in this field of antiepileptics development, they are working very hard and seriously, surely they are geniuses and know as much as encyclopedia, they wait a feedback from whom in the other side, the clinicians, so they can do the best. Clinicians need to stress on the way of how to analyze the concept of epilepsy, and look out by themselves is it a complication to chronic active bacterial encephalitis according to the biological logics? The medicine should based on! The biologic logic says, all symptoms and signs are an alarm signals if we make a good usage of them we by this consider ourselves a real workers in the medical field, rather than abolishing these symptoms and signs by palliative remedies or some physical maneuvers. By this we first; do not make some urgency or canceling the need for advancement by discovering the causes behind symptoms and signs. The second; we allow the cause to go on and as time passes more and more widening and deepening in the condition. A wise man once said the “admiration prevents from increment” means happiness and satisfaction in some affair prevent or cancel the need for further change, change here to the better or advancement. We may face some difficulty in accepting this vision in case the patient with epilepsy does not show any other signs and symptoms! This either inefficiency in patient examination and work up or unsuccessfully case had been appreciated which is due poor correlation and computation of patient’s history and examination against physician knowledge. Here, I think the pathology is as follow; a sub-acute or sub-clinical chronic bacterial active general or systemic illness, in my work I found it clinically and most of PCR results goes with chronic brucellosis which it means it could be the same in other parts of the world especially I found it the same as in Iraq when I worked for one year in Jordan 2006-2007 ministry of health and in Libya in private hospital 2007-2008. As this systemic condition has poorly noticeable and correlated symptoms and signs both to the physicians and the patients it will progress to involve systems one by one as time passes what is in our concerned here is the central nervous system CNS. As CNS get involved it shows a wide range of ill defined and vague manifestations when proceed it end with

either some neuronal irritation and hyper-excitability or glial decrease in its threshold to dam this extra wave or even they become a sink to the normal potential deference current waves where the later causing a Tsunami like resonating waving to end in a giant wave pulse that exceeds the Neighboring healthier parenchymal cells, or a complex of all. This CNS involvement can be regional or global, low grade encephalitis or global with variant grades of regional affections to bring to bizarre mode of manifestations with on/off intervals and grading. This view explains why antiepileptics need to be increased with time quantitatively and qualitatively when they are a way from this concept of the bacterial inflammation of brain. A support to this vision is the improvement of non-seizure manifestations as the anti-Brucella goes on together with the dramatic improvement in our target the seizures without steroids and any kind of vitamins or others but anti-Brucella. Now why PCR results are low! First of all it obeys the doctrine of Heisenberg of uncertainty where no system in our universe is perfect! The manufacturing company of real time PCR device and kits tells you that the sensitivity of its device is 70% like the one we are working on, this means if we inculcate ten subjects by our hands the Brucella germs into their bodies and took a samples from them whatever blood or tissue 7 from 10 will show positive results. So negative results does not rule out infection, this of course in addition to the sample type and site of the tissue taken and technique of taking it. Results jumped from 66% to 80% just when I turned to Trapezius muscle leaving the sacroiliac joint tissues. Another fact, it could be other than Brucella, chronic diseases similar manifestations are common like Salmonellosis, Borreliosis where the later is common in the western world. Many other intracellular bacteria which could be more than fifteen in number are incriminated. This does not mean viruses are remote from the causation. But my arm length is very short; I mean I waited three years to have the kit of Brucella, so how much shall I wait to have multiplex kits or the micro-array kits to detect other microbes! Or when I become capable of take a direct brain parenchymal tissue for PCR detection rather than this indirect tissue now I am taking from Trapezius muscle! A substantial improvements in my work level since it had been mentioned in the first international conference of epilepsy and treatment 20015 Baltimore, USA. Where the role of surgery is outlined in the second in 2016 Rome, Italy. The coming third in 20017 Brussels, Belgium I will talk about the treatment mode in pediatric age group plus the advancement in the state of mentality of these patients. The latter two together with the adult management will be discussed in separate articles.

If we come to the standard categorizing, which some consider them as etiological factors like post traumatic, the recent onset epilepsy associated with tumors whether malignant or benign and many others. I see the post traumatic seizures whatever the trauma is operative or violence is mere energy disturbed the fragile state of the brain systems which is already exhausted by long standing har-

boring of the intracellular pathogens and I stress on bacteria more according to my current concepts. This vision also explains the long standing post traumatic complaints with or without seizure development. And this again obeys the concept of comparative pathology with the tooth sample where a mild blow, some sweet or some cold make the tooth aches, this tooth is diseased even its affection is not overt. The tumor associated seizures, this field is so complicated, but it can be summarized simply, as microbes causes the oncogenicity, the seizure development is one more added feature. It had been known according to their stranded teachings the brain surgeon like me expect the presence of tumor from recent onset epilepsy similar to us when we expect the presence of truffle in open lands after the sky lightening and thunders, in a time they are both the tumor and the seizure are sons of a father who is the intracellular bacteria that the brain cells harbor for a long.

## Conclusion

If we put the above facts in our consideration, we find that epilepsy is one manifestation of a chronic systemic infectious disease mostly due to intracellular bacteria, the others are precipitating or co- factors, in my career this chronic systemic disease is chronic Brucellosis which result in neurobrucellosis, epilepsy is one of the remote complications of the later .

## Recommendation

I invite the workers in the related fields of concerned of this article the physicians, neurologists, neurosurgeons, oncologists, pharmaceuticalists and any others who find in these words an interest to cooperate with me to find out more, I am sure whom will be interested will be in no need for references because they are full of knowledge.



This figure shows the glistening and hypertrophied synovial membrane of the sacro-iliac joint while affected with chronic brucellosis, it was aching and tender, biopsy was positive for Brucella by real time PCR, many others including the positive did not show such a picture.