

# Lyme Disease and it's Coinfections

## Possible Link to Heroin and Opioid Abuse

By Dr. Gregory Paul Bach, D.O., F.A.A.I.M., P.C.

It has been known that patients affected by tick borne diseases (TBD) have a higher percentage of pain problems and exhibit OCD behavior (1),(2),(3),(4),(5),(6),(7),(8),(9),(10),(11),(12),(13),(14). The article is being written to direct this possible link as a source of study to stem this epidemic crisis though out the US and the world. Just using our local paper, the Reading Eagle in PA, June 24, 2016, 47,055 people died from drug overdose in the US in 2014 according to CDC. This number is up 20% according to the Associated Press. (15) In Milwaukee County from 2011 to 2015 drug deaths have increased 41% to 254 including (110) heroin related deaths. 14% of the autopsies were related to overdose deaths in 2011 compared to 26% last year according to Dr. Brian Peterson, the County Medical Examiner. (15),(16) PA overdose deaths are up nearly 25% released in a report by the D.E.A. Tuesday July 12, 2016. (2014 - 27,042 compared to 2015 - 33,083).

Why is there such a drastic increase in current times? A possible strong link may be environmental tick borne infections. (15),(16) 259 million opioids prescriptions were written by Pennsylvania Doctor's, According to Physician general Dr. Rachel Levine, last year. That's enough to provide every adult in America with a bottle of opioids.

Recently, the health section of Allentown's Morning Call, stated (Pennsylvania: Lyme Capital) "Leads the Country in Lyme Disease Cases."

(17) The following case study supports that evidence.

On April 5, 2016 a 35 year old white female presents to my office with multiple pain syndrome and history of Lyme Disease. Her family doctor had just treated her for 6 weeks with Doxycycline, but this was a very weak treatment for the multiple bacteria's associated with this patients tick born disease coinfections. Patient was only tested for Lyme Disease, and not any coinfections.

(8) Past medical history: Patient revealed after a lengthy history and physical exam, which took over an hour, that she had started using Heroin at age 14, using one bag of heroin per day. So over the next 20 years she was living a secret life of a Heroin abuser. She also revealed to me that the Friday before she met with me, she had shot up 7 BAGS of Heroin. She had built up a strong tolerance to the drug with a history of use, on again, off again over the last 20 years. But her main focus was she couldn't handle her multiple body pain and was self-medicating. Having worked with thousands of Lyme (TBD) patients over the last quarter century and also being Board Certified in Addiction Medicine, I have seen this pain behavior multiple times, again and again. I have not only seen this with Heroin use but the other drugs such as Opioids, ETOH (Alcohol), (19),(20),(21) and basic OCD behavior over pain. In this case her physical exam and lab testing revealed that she actually was positive for the following mul-

iple tick borne infections: Active + IGM Q Fever, + Rocky Mountain Spotted Fever, + R. Typhi, + Mycoplasma (PN), Thyroid dysfunction, + EBV, + CMV, + HSV1, + HSV2, + HHV6, + IGG Western Blot Lyme Disease, Active + Hep C, and abnormal EKG showing Supra Ventricular Bradycardia 51 BPM.

Patients hand written symptoms list included PRN - pain, sweating, ear pain, post nasal drip, excruciating morning pain, swollen hands and feet, arms, legs, hand bumps, thyroid problems, bunions, fibromyalgia, excessive weight gain with loss of appetite.

Patient was started on oral Azithromycin, reported to the Board of Health, referrals to Cardiology and Infectious Disease specialists for Hep C treatment along with a possible MRSA infection. Patient was give IM Rocephin, Bicillin, along with B12 and Magnesium.

Patient was under care of pain management specialist without relief. \*It should be noted that Lyme Disease lives on Magnesium and causes severe muscle pain and contractions while other bacteria's are copper based and do not behave like that. Therefore, pain management won't work until the underlying infection is diagnosed and corrected. I put the patient on Benadryl every four hours to reverse Herxheimer reaction (flair up of symptoms) and control her pain, which it did. Benadryl stops the inflammation brought on by the swelling secondary to the infectious underlying disease which

causes pain. NO SWELLING = NO PAIN. In the outcome of this case the patient's pain subsided and the patient elected to go into rehab on her own, and on last contact was pain and drug free. A note of interest in this case the patient's mother, a former nurse, was also diagnosed and treated for Lyme Disease and Mycoplasma also by me. Over the years the majority of my Lyme/TBD patient's histories reveal at least one relative is suffering from alcohol or drug abuse which in some cases led to their suicide or death, besides the patient themselves suffering from drug and alcohol abuse.

Two other cases to illustrate.

A 60 year old white female, a Doctors mother, who was on pain Opioids for over 4 years could no longer sit due to severe pelvis pain, she could only stand or lay. After proper treatment for her Lyme Disease (TBD)s she was able to stop all pain medication over the next couple of months and lost her severe pain syndrome and returned to normal life. Another case recently of a builder in his late 40's was on 6 OxyContin a day for pain. After being treated for a couple of weeks, stopped his treatment and was able to go off all pain medication and return to running his construction company.

Again, this article is to send a SOS signal to the medical community and health officials. The major breakdown in our society with an increase of Opioids and Heroin abuse (21) may be in large part a result of Lyme Disease and tick borne infections. As I have written and published in the past, the local standard testing is inadequate and useless, (13) due to the abuse by the patent holders of the Elise Test being used currently. The medical community as a whole needs to wake up, focus on what is at

the real core of the problem.

#### Footnotes

1. Melski Jw: Lyme Borreliosis Semin Cutan Meg Surg. 2000 Mar, 19 (1): 10-8
2. Flidisk R, Prokopowicz D.: Wiad Parazytol. 1999; 45 (2): 143-9 Clinical Picture of Lyme Borreliosis
3. Lipsker D: Med Mal Infect. 2007 Jul-Aug; 37 (7-8): 540-7. Epub 2007 Mar 27 Dermatological Aspects of Lyme Borreliosis
4. Dr. Mercola: <http://articles.mercola.com/sites/articles/archive/2013/09/04/lyme-disease.aspx> Prevalence of Lyme Disease om the US is 10-times higher than previously reported
5. NINDS, NIH.; <http://www.ninds.nih.gov/disorders/lyme/lyme.htm> NINDS Neurological Complications of Lyme Disease Information Page
6. Gelfand, Jeffery A., Vannier Edouard G., Mandell Gerald L., Bennett John E., Dolin Raphael. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, 7th Edition (282) 3542-3544, Babesia Species.
7. Marrie Thomas J.; Mandell Gerald L., Bennett John E. Dolin Raphael. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, 7th Edition (189) 2511-2519 Coxiella Burnetii (Q Fever)
8. Steere Allen C.; Mandell Gerald L., Bennett John E., Dolin Raphael. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, 7th edition (242) Page 3075-table 242-1: page 3077, Coinfections; Borrelia burgdorferi (Lyme Disease, Lyme Borreliosis)

9. Bach, Gregory P, D.O.;: 14 International Scientific Conference on Lyme Disease and other tick borne diseases: April 21, 2001: Recovery of Spirochetes by PCR in Semen samples of Previously diagnosed Lyme disease patients.
10. Gaito, Andrea M.D., Expert Rev. Anti-infect. Ther. 2(1), Suppl. (2004) Expert Review of Anti-infective Therapy page S5 num.9
11. Bach, G.: Wildlife Management News. Feb-Mar-Apr 2016. Lyme Disease 103-Children and Lyme Disease. Page 31.
12. Fallon, BA. Neurology. Mar 25, 70(13): 992-1003. Fallon, BA Makousa M. Poster presentation. Drexel ILDS Symposium. April 3.
13. Bach, G.: Wildlife Management News, 2nd Edition. 2015 page 25-27. Lyme Disease 101-Part 2.
14. Reading Eagle, Reading Pa. Mon., July 18, 2016. Page B3 "Caltagirone Urges Suit Over Opioids"
15. Reading Eagle, Reading Pa. Fri. June 24, 2016. Many Thousands Die, (page A3) - the Assoc. Press.
16. Reading Eagle, Reading Pa. Wed. July 13, 2016. Page B8 by Ford Turner "Overdose Deaths Up Nearly 25%"
17. The Morning Call, Allentown Pa. Tues. Sept 15, 2015. (Life 1)- Pennsylvania: Lyme Capital.
18. Reading Eagle, Reading Pa. Mon. July 25, 2016. (page B3) "259 Million Prescriptions for Opioids Written By Pennsylvania Doctors Last Year."
19. Bach, G.: Wildlife Management News, 3rd edition 2015 (page 23)
20. Hajek et al., Am J Psychiatry. 2002, 159: 297-301.; What Psychiatrists should know about Lyme Disease.



# Lyme Disease and TBDs, A Case of Reversed Heart Failure

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**A**s you may or may not know, Lyme Disease, TBDs (Tick Borne Diseases) and Heart Related Diseases have been linked in peer review literature for decades (1, 2,3,4,5,6,7,8,9,10,11,12,13,14). One of the things that Lyme can do is that it can accelerate (speedup) your heart-rate or decrease (slow down) (7) your heartrate, where it makes the heart so weak it can't pump the correct volume of blood. Lyme Disease likes muscles and the heart is one large muscle, so for that reason whenever I see a patient for the first time in my practice, I always run an EKG. I've found in the thousands of cases that I've diagnosed Approx. 50% have Normal EKGs (4,5,6,8,12,14) which referred to a cardiologist. After proper diagnosis and starting them on the correct treatment, Approx. 95% of their abnormalities correct themselves before their first visit to the cardiologist.

This case is to illustrate one of those patients and this is the story of a 63-year-old white male, who I first saw on 12-4-2015. His incoming complaints were that he had a double bell's palsy, which means both sides of his face were paralyzed. He had a history of multiple deer tick bites and EM rashes. Along with severe joint, muscle pain, and fatigue. Patient had prior CDC positive spinal tap for Lyme Disease in 09/2015 and positive serology (blood testing). He had a history of severe heart involvement. Patient had a

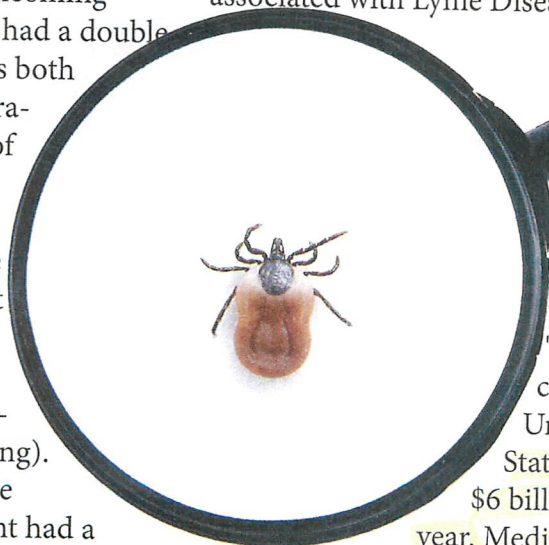
previous abnormal MUGA scan (1) it was repeated on 12-30-2015, the conclusion showed that there was severe left ventricular systolic dysfunction, and no change from prior imaging on 10-16-2015. "A MUGA scan is a test using a radioactive nucleclide and a special camera to take pictures of your heart as it pumps blood. The test measures how well our heart pumps with every heartbeat (1,2)."

This 63-year-old white male of normal development, weighed 210 pounds, HT was 6'3". Patient's past medical history was that of thyroid disease, improperly treated Lyme Disease with steroids (which exacerbated and worsened the underlying bacterial infection), prior heart attack, and possible allergy to Sulfa. Negative tobacco or alcohol use. Patient's Family history, mother age 58 died from an unknown type of kidney disease, father died at age 43 of a heart attack? Patient's wife has been diagnosed with atrial fibrillation (AFib) (3,4). This has been reported in the literature to be associated with Lyme Disease

for people who have AFib are about \$8,705 higher per year than for people who do not have AFib (3,4)." On a side note, it has been reported in the literature that Lyme Disease has the potential to be sexually transmitted like syphilis. This supports the possibility that Heart Disease caused from an underlying infection for example Lyme Disease, can be sexually transmitted (15, 16, 11, 18).

Lab tests revealed CDC positive for Lyme Disease,+ EBV (Epstein Barr Virus, Mono.),+ HSV-1, + HSV-2, + HHV-6, + Mycoplasma Pneumoniae, and+ hypogonadism (182L/250N).

Patient was treated from 12-4-15 with IM (intermuscular) and oral antibiotics. MUGA report



(2). According to the CDC "AFib costs the United States about \$6 billion each year. Medical costs dated 3- 25-16, 3 months and 21 days later, showed improved planar LVEF at 31% previously to 39% on this test date. This changed his overall test result from severe left ventricular systolic dysfunction to current results of moderate left ventricular systolic dysfunction. Thus allowing the patient to avoid having a surgically implanted pacemaker. The patient had



to wear an external recording device from 10-16-2015 to 3-25-16, almost a half a year. The unit was the size of an old fashioned tape recorder approximately 6" X 9". It had to be worn 24/7 while the patient, slept, ate and even showered. The cardiologist was pushing for him to have a pacemaker implanted, but with the change in his MUGA scan report proved that not only the external device was not necessary but his heart had returned to high enough function that it did not require a surgically implanted pacemaker. Patient as of 10-10-2016 continues to improve with treatment.

-Dr. Gregory Bach

### References

1. "Radionuclide Ventriculography or Radionuclide Angiography (MUGA Scan)." American Heart Association, July 2015.
2. Miller, Laurie. "How Lyme Disease Affects the Heart." Pro-Health, 22 February 2016.
3. "Division For Heart Disease and Stroke Prevention: A Atrial Fibrillation Fact Sheet". CDC. 13 August 2015.
4. Wenger, Nathalie, et. al. "Atrial fibrillation, complete atrioventricular block and escape rhythm with bundle branch block morphologies: An exceptional presentation of Lyme carditis" International Journal of Cardiology. 160(2012) e12-e14.
5. Sanders, Lisa. "Think Like a Doctor: A Peculiar Heartbeat Solved!" The New York Times. 10 August 2012.
6. Nalmas, Sandhya, et al. "Electrocardiographic Changes in Infectious Diseases". Turner White Communications, Inc. September 2007. P 15-27.
7. Thomas, Huw. "Brachcardia" Patient. N.d. 12 October 2016.
8. Lyons, Rachel. "Case in Point: Heart Block as the Presenting Symptoms of Lyme Disease". Consultant. 29 April 2011.
9. Oktay, A. Afsin, et al. "Sinus Pause in Association with Lyme Carditis". Texas Heart Institution. 2015. Volume 42 Number 3.
10. Bernard, Keith. "Clinical: Case Study-Cardiac symptoms of unusual origin". General Practitioner. 4 December 2009.
11. Forrester, Joseph D., et. al. "Update on Lyme Carditis, Groups at High Risk, and Frequency of Associated Sudden Cardiac Death- United States." U.S. Center for Disease Control. 31 October 2014.
12. Heckler, Alan K., Daniel Shmorhun. "Asymptomatic, Transient Complete Heart Block in a Pediatric Patient with Lyme Disease." Sage. 2010.
13. "Three Sudden Cardiac Deaths Associated with Lyme Carditis- United States, November 2012-July 2013". Centers for Disease Control and Prevention. Volume 62, no 49.
14. Forrester, Joseph and Paul Mead. "Third-Degree Heart Block Associated With Lyme Carditis: Review of Published Cases" Healthcare Epidemiology. 1 July 2014.
15. Bach, Dr. Gregory. "Recovery of Lyme Spirochetes by PCR in Semen Samples of Previously Diagnosed Lyme Disease Patients" International Scientific Conference on Lyme Disease. 10 April 2001.
16. Bach, Dr. Gregory "Lyme Disease: The Unknown Epidemic" Alternative Medicine. Issue 41 May 2001.
17. "Sexual Transmission of Lyme Disease: Challenging the tickborne disease paradigm" Informa Healthcare. 8 2015 .
18. "Recent Study Suggests that Lyme Disease can be Sexually Transmitted" The Journal of Investigative Medicine 2014; 62:280-281.





# The Other Lyme Disease, Borrelia-Relapsing Fever

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A year ago I had a 21-year-old white female come to my office. She was very sick and was dropping out of college. She was a finance major and very bright. She came with her mom, who looked very familiar to me. I asked her mom how she knew to come to see me and she answered "Why you took care of my husband."

The patient's father came to me about 15 years ago when I was researching the connections between Lyme Disease and ALS. He was one of my ALS (Amyotrophic Lateral Sclerosis) patients with Lyme Disease. I only got to see him 3 times and I remember he had ended up getting sick and going into the hospital. She told me that the 3 treatments I gave him extended his life 5 more years. I thought she would be upset with me but she and her daughter were grateful to have the extra time with him, he worked as a stock broker. The average age of an ALS patient from diagnosis to death is within 9 months to 2 years, it's also known as Lou Gehrig's Disease. An article was featured in People Magazine in 2003, called the "Hidden Plague", concerning another patient of mine. He was 30 years old and diagnosed at a major university in Maryland. He was told that he only had months to live. I remember this case quite clearly because I never had a patient come to me telling me that he's supposed to be dead by April 1st. He had a hard time speaking because his throat and speech area

was affected by what looked like ALS. At that time I was taking care a number of his neighbors who were suffering from Lyme Disease. At his request, I did a full work up on him, to my surprise he showed positive for Lyme but showed full symptoms of Bulbar ALS. I found a bull's eye rash on the back of his head, I treated him for many months, he survived and went on to name his son after me and became a doctor himself (1). A side note, Where did Lou Gehrig live? He lived in Lyme, Connecticut (town where Lyme Disease was first discovered); I know this because around the time I was working with this patient, I picked up a 26-year-old white male who was a landscape caretaker of the Lou Gehrig's Estate. He came in with what looked like Lou Gehrig's Disease, we later confirmed it was Lyme Disease. I was able to reverse his ALS

symptoms and he is still alive and well today.

So, my 21-year-old patient was actually scared she was going to die like her father did from ALS. She had less than 12 months to graduate, her straight A grades were dropping to the point where she couldn't even attend her classes. So, I did my usual work up on her and looked for many coinfections, that includes not only Lyme Disease but more than 24 other diseases that can travel with Lyme. This is an important statement because most people are so focused only Lyme Disease, they don't realize the other 2-3 dozen diseases that travel with it can be just as crippling. Some of these coinfections include Ba- be-





siosis, Bartonella, Ehrlichiosis, Rickettsiosis, Q fever, Epstein Barr Virus, Parvovirus, Mycoplasma Pneumoniae, Rocky Mountain Spotted Fever, Cytomegalovirus, C. Pneumoniae, TBRF, and HHV-6 (2).

will show Lyme Disease in 5 minutes or less. I explained to him I couldn't vouch for the validity of this test. It's not just Lyme Disease that can hurt you it's the other 2-3 dozen diseases that can travel with it (2).

Back to my 21-year-old patient, whom was now very sick and dying. I tested her for Lyme Disease but the re-

analysis that read TBRF (Tick Borne Relapsing Fever).

I've been in this field for over a quarter century and I've only ever read about this type of disease, that was usually seen in North Africa, Europe and South America (5,6). I realized that it is possible that the patients that don't show positive for the regular form of Lyme disease, called *Borrelia burgdorferi*, may have the brother disease called *Borrelia-Relapsing Fever*. What a profound revelation. My current research is proving this to be true.

The patient was treated and returned to her studies. She went on to graduate from college as a finance major and followed in her father's footsteps as a stock broker. I now had to look at all of our new patients that were coming in. I found that the one who were hard to get a positive test for Lyme Disease were also infected with the brother

species *Borrelia (Relapsing Fever (TBRF))*. Relapsing Fever can be found all over the world ex-

sults showed it was

partially positive, not enough to satisfy the CDC criteria. So,

out of desperation I contacted my research lab that I was using and asked the director to look for any other diseases this patient could have.

So, she went into her profile of all the diseases she had available at the lab and put everything into the blood analysis she could think of. Well, "low and behold" to my great astonishment, I received the results for the

As an example, I recently had a conversation with a potential patient who had just been bitten by a tick. He thought the best way to handle a tick bite was to try this new test that





American Andes (Bolivia, Peru) (9). TBRF is caused by a tick genus (*Ornithodoros*) these ticks inhabit caves, decaying wood, rodent burrows and animal shelters, the range of movement is less than 50 yards (10). They use these rodent vectors (Vector is anything used to transmit a disease) to carry them into the world and inhabit human dwelling. They come at night (3) and they are night feeders; they have a way of creating a painless bite (7,8). Whereas other tick borne diseases, like Lyme disease have a more painful bite. In TBRF, *Borrelia* these blood meals of ticks multiply rapidly and within hours invade all tissues, including salivary glands, excretory organs and the genital system (10,11). They are excreted from the salivary glands during the feeding process of the tick (10,11). There was another large outbreak of tick-borne relapsing fever in the western hemisphere, it occurred when 62 campers who were residing in log cabins in Arizona became infected in 1973 (12). These zoonotic plagues may have killed a number of natural rodent hosts (8).

This type of *Borrelia* Relapsing Fever has an acute onset of a high fever, severe headaches, Arthralgia and lethargy. Physical findings may include altered senses, red sclera (whites of eyes), enlarged spleen or liver, stiff neck, lung crackles, swollen lymph nodes, and jaundice (Yellowing of skin) (13). This crisis may be associated with fatal hypotension and shock, but that's not often the case. After 7 to 10 days, fevers and symptoms typically recur suddenly. The durations and the intensity progressively decrease with each relapse (15, 16, 17). Hemorrhage can be common, 30% have neurological problems, some include cranial nerve palsy and seizures (13, 14).

So, when the doctor suspects Lyme Disease, but the tests come

back repetitively negative. They should then consider testing for the other *Borrelia* species (relapsing fever). This might be one of the missing pieces of the puzzle as to why some patients remain symptomatic even when their diagnosing doctor's tests for Lyme Disease come back negative. This doesn't mean that they aren't infected with TBRF or one of the many other coinfections that travel with Lyme Disease.

-Dr. Gregory Bach

### References

1. Heyman, J.D. and Fowler, Joann. Hidden Plague. People Magazine. June 16, 2003. Volume 59. No. 23. Page 123.
2. Bach, G. Attention Hunters; Warning!. Wildlife Management News. 4th Quarter 2014. Page 19.
3. Auerbach, Paul S. (2012). Wilderness Medicine (6th Edition) Ch. 51 Tick-Borne Diseases. Traub, Stephen J., Cummins, Gregory A. Page 165. China: Elsevier.
4. Mandell, G.L., Bennett, J. E., & Dolin, R. (2010). The Principles and Practice of Infectious Diseases (7th ed.) Ch. 241 *Borrelia* Species. Rhee, Kyu Y., Johnson, Warren D. pages 3067-69 Philadelphia, PA: Elsevier.
5. Felsenfeld O, *Borrelia*: Strains, Vectors Human and Animal Borreliosis. St. Louis: Warren H. Green; 1971: 180.
6. Bryceson, ADM. Parry EHO, Perine PL, et al. Louse-borne relapsing fever. A clinical and laboratory study of 62 cases in Ethiopia and a reconsideration of the literature. Q J Med. 1970; 39:129-170.
7. Burgdorfer W. The enlarging spectrum of tick-borne spirochetoses: R R Parker Memorial Address. Rev Infect Dis. 1986;8:932-940.

8. Burgdorfer W. The epidemiology of relapsing fevers. In: Johnson RC, ed. The Biology of Parasitic Spirochetes. New York: Academic Press; 1976: 191.
9. Felsenfeld, O. The problem of relapsing fever in the Americas. Indiana Med. 1973;42:7.
10. Dworkin, MS. Schwan TG. Anderson DE. Tick-borne relapsing fever in North America. Med Clin NA. 2002;86:417-433.
11. Davis, GE. The endemic relapsing fevers. In: Hull TG, ed. Diseases transmitted from Animal to Man. Springfield, IL: Charles C Thomas; 1955: 552-565.
12. Centers for Disease Control and Prevention. Relapsing Fever. Morb Mortal Wkly Rep. 1973;22:242-246.
13. Southern PM Jr, Sanford JP. Relapsing Fever: A Clinical and microbiological review. Medicine. 1969;48:129-149.
14. Cadavid D, Barbour AG. Neuroborreliosis during relapsing fever: Review of the clinical manifestations, pathology, and treatment of infections in human and experimental animals, Clin Infect Disease. 1998; 26:151.
15. Jongen VHWM, Van Roosemalen, J, Tiems J, et al. Tick-borne relapsing fever and pregnancy outcome in rural Tanzania. Acta Obstet Gynecol Scand. 1997;76:834.
16. Dupont HT, La Scola B, Williams R, et al. A focus of tick-borne relapsing fever in southern Zaire. Clin Infect Dis, 1997;25:139.
17. Borgnolo G, Hailu B, Ciancarelli A, et al. Louse-borne relapsing fever: A clinical and an epidemiological study of 389 patients in Asella Hospital, Ethiopia. Trop Geogr Med. 1993;45:66.