

Lupus can be caused by asymptomatic Salmonellosis in Bladder?

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We believe that all the symptoms of systemic lupus erythematosus (SLE) in the same way that all biochemical, immunological and epidemiological aspects of the disease can be easily justified by analogy, to that is found in urinary tract infections and in Salmonellosis. According our thesis the pathogenic agent of typhoid fever remain hidden in bladder, gallbladder and/or bone marrow of SLE patients, causing a subclinical interstitial cystitis creating the autoantibodies, and consequently, the SLE. For us, if lupic patients were treated with antibiotics until total eradication of Salmonella, usually four weeks, they would be cured. Below, are listed the coincidences and reflections that made us formulate this thesis:

The patients will need adjunctive treatment for Gardnerella, because of its high correlation with urinary infections and for producing nuclear antibodies like Samolnella. The bladder should be treated, in addition to antibiotics, also with vitamin E and glucan glycamine orally, helping to replace protective mucus. The antibiotic obligatorily need to cover Gardenerella.

Below, are listed the coincidences and reflections that made us formulate this thesis:

Both LES as urinary tract infections share the same interleukins: the IL-8 that is a potent chemotactic factor for neutrophils [1-4] and the IL-18, a stimulator of gamma interferon, secondarily released after kidney injury [5-8]. Proteins released by Salmonella can block the immune activity of neutrophils, in murine models [9].

LES and UTI share the same leukocyte chemotactic factor: CCL2. [10,11]; the same can to cause hydronephrosis [12,13]. LES and typhoid fever produce the same macrophage differentiation into his respective tissue lesions: infiltration of CD3+, CD8+ and CD68+ [14,15].

LES and typhoid fever may produce the same alterations in urine during the disease progression: leukocyturia and/or hematuria, and according the kidney function is lost, proteinuria [16,17]. Both in LES as urinary infections, progressively, it is found a decreasing on chondroitin sulfate /heparin sulfate ratio in urine according the disease is developing [18,19].

The blood analysis is also similar in LES and in typhoid fever: neutropenia, anemia and thrombocytopenia may be present in both [20,21]. Lupic patients exhibit increased levels of gamma glutamic transferase levels and coincidently, after an acute typhoid episode, about 3-5 % of individuals become asymptomatic carriers. Many of these infected individuals shows an established infection in their gall bladder [22].

Salmonella is of fecal oral transmission i.e. by contaminated food, water and sexually [23]. The countries that exhibit the greater prevalence

of typhoid fever are the same that shows the greater prevalence in LES [24-26].

Salmonella can to induce the formation of autoantibodies [27] against the cell nuclei and therefore, at least theoretically, of to produce all the symptoms of lupus, since it could activate C3 causing the initial inflammation [28]. The leukocyturia is the most common finding in urine I of LES patients as also in typhoid fever [21,29]. S typhi induce the creation of immune complexes formed by IgM with C3 activation and consequently glomerulitis [30,31], as the same way that is described in lupic nephrite [32].

Interesting to notify that other parasites and protozoa can to positive rheumatoid factors, parasites that may share the same ecological niche with Salmonella, increasing the risk of parasites contamination [33]. However, why the diagnosis is not made? The reason for the failure on making the diagnostic of Salmonellosis in bladder of lupic patients would be outcome of the scarcity of urinary symptoms [34,35], and the negative results seeing in urine assays, more specifically in uroculture. Only 25% of patients with typhoid fever excrete S typhi in their urine at some point during their illness [36,37].

The bladder in lupus and in cystitis interstitial are virtually identical [38,39]. Cystitis interstitial also is considered an autoimmune disease [40], of not known origin like lupus. Interesting to note, however that the use of antibiotics in cystitis interstitial, doxycycline for the couple, cure 70% of the cases and alleviate the symptoms in all cases [41]. Both urinary infections as LES affects much more the women than the man, the peak of prevalence occurs between the ages of 15 and 28 linking it with probable sexual activity [42,43]. It would justify why patients with Klinefelter syndrome are prone of develop lupus, perhaps by the less self-care that increase the risk of parasitosis contaminations as urinary tract infections [44] and the fever when lupic patients are worsening [45-47]. Therefore, if lupus is secondary to a simple case of cystitis produced by an undiagnosed Salmonella, the treatment of lupus should firstly be based on preventing reinfection, questioning the quality of the food and water that the patient currently drinks and sexual partners. Any water ingested that is not from a selated bottle or fevered is suspect. Not forgetting the several other potential ways of be contaminated like the contact with birds, chickens and reptiles.

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Having made this consideration, perhaps SLE deserve be investigated like potential outcome of a subclinical Salmonellosis.

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