

## SERUM IgA DEFICIENCY IN SYSTEMIC LUPUS ERYTHEMATOSUS

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To the Editor,

Serum immunoglobulin A (IgA) constitutes 15 to 20% of the total immunoglobulin pool and is the main immunoglobulin in mucous tissues<sup>1</sup>. Its deficiency (IgA D) is the most common of primary immunodeficiencies<sup>1</sup>. IgA D is defined as a serum value under 0.05g/l in people older than 4 years of age and results from a failure of the IgM producing B cell to evolve into a cell that produces IgA<sup>2,3</sup>. The primary form of IgA D is a genetic disease associated with histocompatibility complex haplotypes such as HLA A1; B-8, DR3, A-29 and B14 as well as with genes associated with C4 and tumor necrosis factor (TNF) production<sup>1,2</sup>.

IgA D is associated with autoimmune diseases such as thyroiditis, systemic lupus erythematosus (SLE), rheumatoid arthritis, scleroderma, psoriasis, celiac disease, miastenia gravis, etc<sup>1</sup>. Rankin and Isenberg found 5 patients with IgA deficiency among 96 SLE patients<sup>2</sup>. Rife *et al* found it in 3 of 72 lupus patients<sup>4</sup>. Interestingly drugs such as sulphasalazine, d-penicillamine and phenytoin that are known to induce lupus can also cause acquired IgA D<sup>1,2</sup>.

As IgA D is variable according to the ethnic background of the studied population<sup>1</sup> we searched for it in 189 lupus patients from Southern Brazil (7 males and 182 females). This study was approved by the local Committee of Ethics in Research and all participants signed a written consent. None of them was using gold salts, d-penicillamine, phenytoin or sulphasalazine neither had hepatitis C or HIV infection. The age at disease onset varied from 10 to 63.5 years (mean 29.6 ±10 years) and mean disease duration 6.6 ±5.8 years. IgA was measured by nephelometry and patients with values under 50mg/l were considered deficient. As controls we used literature data in IgA D of a study done in 11.576 healthy people from the same geographical area<sup>5</sup>. Patient's charts were reviewed for demo-

graphic and clinical data as well as for auto antibodies profile. Statistical analysis was done with the help of software Graph Pad Prism, 4.0, using Fisher, chi-squared and Mann-Whitney tests according to the studied variable.

We found IgA D in 11 (6.17%) individuals of the studied population. Comparing this with a known prevalence of 1.96% in the normal population of the same geographical area<sup>5</sup>, we found to be highly significant ( $p<0.0001$ ). Gender and age of disease onset in lupus patients with and without IgA D was the same ( $p=1,0$  and  $0,71$  respectively).

Data on clinical and autoantibodies profile in patients with and without IgA D is summarized in Table I.

This study showed a higher rate of IgA D in systemic lupus population of Southern Brazil when compared with normal population but no differences in clinical or autoantibody profile could be found in lupus patients with and without it. Despite the lack of influence of IgA D in the clinical and laboratory findings of SLE, there are, at least, two important reasons to justify this finding. The first is that SLE patients have a high rate of infections that are one of the most common cause of death in this disease<sup>6</sup>. As IgA is an immunoglobulin that act as a barrier preventing infections, IgA D may favor their occurrence. The second is that the lack of IgA may be linked to the onset of SLE. Among the possible explanations for this are<sup>1,7,8</sup> (a) - a common genetic background for the two situations; (b) - favoring viral infections such as Epstein Barr, CMV, etc by IgA D – all of which are implicated in SLE physiopathology; (c) - an anti-inflammatory action of IgA. Interaction of IgA with Fcα R1 of cellular membrane causes activation of ITAM (*tyrosine based activation motif*) that causes inhibition of inflammatory and autoimmune reactions. Lack of IgA nullifies this inhibitory sign.

Concluding, systemic lupus patients from Southern Brazil have an IgA D prevalence of 6.17% and it is not possible to separate those patients by clinical presentation or autoantibody profile.

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**Table I. comparison of clinical data and autoantibodies profile in systemic lupus patients with and without IgA deficiency (IgA D)**

<b>Variable (prevalence)</b>	<b>With IgA D n=11</b>	<b>Without IgA D n=178</b>	<b>p(*)</b>
Arthritis (102/188 or 54.2%)	4 (36,36%)	98 (55,36%)	0,3502
Psychosis (6/186 or 3.2%)	0	6 (3,42%)	1,0000
Convulsions (17/186 or 9.1%)	1 (9,09%)	16 (9,14%)	1,0000
CVA (10/186 or 5.3%)	1 (9,09%)	9 (5,14%)	0,4649
Serositis (33/177 or 18.6%)	1 (9,09%)	32 (19,27%)	0,6920
Hemolysis (12/187 or 6.5%)	0	12 (6,8%)	1,0000
Leucopenia (51/187 or 27.2%)	4 (36,36%)	47 (26,7%)	0,4949
Plaquetopenia (41/187 or 21.9%)	4 (36,36%)	37 (21,02%)	0,2609
Nephritis (83/189 or 43.9%)	5 (5,45%)	78 (43,82%)	1,0000
Anti DNA (49/189 or 25.9%)	4 (36,36%)	45 (25,28%)	0,4797
Anti Ro (73/188 or 38.3%)	4 (36,36 %)	65 (38,98%)	1,0000
Anti La (32/188 or 17%)	1 (9,09%)	31 (17,51%)	0,6933
Anti RNP (45/175 or 25.7%)	1 (9,09%)	44 (27,5%)	0,2918
Anti Sm = (40/176 or 21.3%)	0	40 (22,72%)	0,1244
aCl IgM (22/177 or 11.7%)	0	22 (13,25%)	0,3676
aCl IgG (28/189 or 14.8%)	1 (9,09%)	26 (12,51%)	1,0000
LAC (27/175 or 14.4%)	1 (9,09%)	26 (15,85%)	1,0000

CVA = stroke

aCl= anticardiolipin

LAC= lupus anticoagulant

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