(S11) THE UPPER RANGE OF SERUM ANGIOTENSIN-CONVERTING ENZYME LEVELS IN MULTIPLE SCLEROSIS  
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Background: Elevated serum angiotensin-converting enzyme (ACE) levels have been reported in multiple sclerosis (MS) patients. In a previously reported data set of 75 clinically definite MS patients, serum ACE levels were measured using a spectrophotometric assay based on the absorption of the ACE-specific substrate furanacryloyl-modified phenylalanyl-glycyl-glycine, with results expressed in units per milliliter. The upper limit of normal was defined as 50 U/mL. Twenty-three percent of 75 patients were above this level, compared with 6% of 31 age- and sex-matched controls. The highest level reported was 164 U/mL on the graphic display. Objectives: We are presenting case data to demonstrate a new upper range of serum ACE levels in clinically definite MS. Methods: We have followed a 59-year-old white woman with clinically definite MS for more than 4 years, treating initially with interferon beta-1a, 30 mg intramuscularly weekly for 4 months, followed by glatiramer acetate, 20 mg subcutaneously daily. She was extensively evaluated during this time. Results: Elevations of serum ACE levels ranging from 293 U/L to 434 U/L have been monitored throughout this time, using a comparable spectrophotometric assay commercially available through Quest Labs (normal range: 9–67 U/L). Extensive pulmonary evaluation has yielded no evidence of sarcoidosis. Magnetic resonance imaging has been compatible with MS, including periventricular and subcortical lesions and multiple spinal cord lesions in the cervical and thoracic regions. Prolonged bilateral visual evoked responses were noted. Positron emission tomographic imaging from the vertex to the mid-thighs yielded moderate focal hypermetabolism in the anterior aspect of the proximal thighs. The left proximal thigh skin and subcutaneous tissue was biopsied, with a diagnosis of “chronic septal panniculitis, suggestive of erythema nodosum.” No granulomas were reported. A lumbar puncture yielded clear cerebrospinal fluid (CSF) with 0 white blood cells, 0 red blood cells, protein 44 (normal range: 15–45), 13 oligoclonal bands (none detected in serum), CSF ACE <4 (normal: <4), and CSF VDRL negative. Conclusions: During more than 4 years of follow-up, no clinical evidence of sarcoidosis has emerged, suggesting that the upper range of serum ACE levels in MS patients is much higher than most clinicians have thought.  

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