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Para:

Attention deficit and hyperactivity disorder scores are elevated and respond to N-acetylcysteine treatment in patients with systemic lupus erythematosus.

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Arthritis Rheum. 2013 May;65(5):1313-8. doi: 10.1002/art.37893.

OBJECTIVE:

To investigate whether attention deficit hyperactivity disorder (ADHD) may serve as a marker of neuropsychiatric disease and as a target for N-acetylcysteine (NAC) treatment in patients with systemic lupus erythematosus (SLE).

METHODS:

The ADHD Self-Report Scale (ASRS) was used to assess 49 patients with SLE and 46 matched healthy control subjects. Twenty-four of the patients with SLE were randomized to receive either placebo, NAC at a dosage of 2.4 gm/day, or NAC at a dosage of 4.8 gm/day. Disease activity was evaluated monthly using the British Isles Lupus Assessment Group (BILAG) index, the Systemic Lupus Erythematosus Disease Activity Index (SLEDAI), the Fatigue Assessment Scale (FAS), and the ASRS, before and during the 3-month treatment period and after a 1-month washout period.

RESULTS:

The cognitive/inattentive (ASRS part A), hyperactivity/impulsive (ASRS part B), and combined (total) ASRS scores were increased in patients with SLE compared with control subjects (mean \pm SEM 17.37 ± 1.03 [$P = 3 \times 10^{-7}$], 14.51 ± 0.89 [$P = 2 \times 10^{-4}$], and 31.92 ± 1.74 [$P = 8 \times 10^{-7}$], respectively, versus 10.41 ± 1.02 , 9.61 ± 1.21 , and 20.02 ± 1.98 , respectively. ASRS part A scores correlated with SLEDAI ($r = 0.53$, $P < 0.0001$) and BILAG scores ($r = 0.36$, $P = 0.011$). ASRS total scores also correlated with SLEDAI ($r = 0.45$, $P = 0.0009$) and BILAG scores ($r = 0.31$, $P = 0.025$). ASRS part A ($r = 0.73$, $P < 0.0001$), ASRS part B ($r = 0.47$, $P = 0.0006$), and ASRS total scores ($r = 0.67$, $P < 0.0001$) correlated with the FAS score. Relative to the scores in placebo-treated patients, ASRS total scores were reduced in SLE patients treated with NAC dosages of 2.4

gm/day and 4.8 gm/day combined ($P = 0.037$). ASRS part A scores were reduced by NAC dosages of 2.4 gm/day ($P = 0.001$) and 4.8 gm/day ($P < 0.0001$) as well as by NAC at dosages of 2.4 gm/day and 4.8 gm/day combined ($P = 0.001$).

CONCLUSION:

In patients with SLE, elevated ASRS scores reveal previously unrecognized and clinically significant symptoms of ADHD that respond to NAC treatment.