355

Authors: S.K. Lutgendorf, K.J. Kreder, N.E. Rothrock, T.L. Ratliff
Institution: University of Iowa
Title: DIURNAL CORTISOL LEVELS AND SYMPTOMATOLOGY IN INTERSTITIAL CYSTITIS

Aims of Study:

IC is a chronic, disabling bladder condition characterized by urinary symptoms including urgency, frequency, and pain. Systemic mechanisms affecting symptomatology in IC are not clear. Abnormal function of the hypothalamic-pituitary adrenal axis has been documented in rheumatoid arthritis, fibromyalgia (FM), and chronic fatigue syndrome (CFS), which have high comorbidity with IC.

Methods:

To determine possible involvement of HPA mechanisms in IC, we examined 52 women with IC (mean age 49.62; S.D. 15.76) and 36 healthy controls (mean age 53.33; S.D. 16.47). Subjects completed a 4-week symptom diary, symptom questions from the IC Data Base survey, a 24-hour urine sample, and saliva samples for 3 days at 7-8 a.m., 4-5 p.m., and 9-10 p.m. Urinary cortisol/g creatinine and salivary cortisol were assessed by radioimmunoassay. Mean salivary cortisol levels were averaged over the three days for each time. Patients treated with DMSO, chlorpactin, or exogenous glucocorticoids in the last month were excluded to eliminate possible confounds.

Results:

There were no differences in 24-hour cortisol or salivary cortisols at any time point between groups (p-values > 0.10). However, patients with higher morning cortisol reported less overall pain ($r = -0.64$, $p = 0.001$), 24-hour frequency ($r = -0.45$, $p = 0.008$), nocturnal frequency ($r = -0.39$, $p = 0.02$), and urgency ($r = -0.34$, $p < 0.05$), less pain increasing as bladder fills ($r = -0.56$, $p = 0.001$), and less pain in the lower abdomen ($r =- 0.41$, $p < 0.05$). In contrast, higher levels of afternoon cortisol were related to greater symptom severity ($r = 0.34$, $p = 0.053$), greater pain ($r = 0.44$, $p = 0.04$), and greater mean urgency ($r = 0.44$, $p = 0.038$). There were no relationships between night cortisol levels or 24-hour cortisol levels and symptoms.

Conclusions:

Although mean levels of cortisol throughout the day may not differ between patients and controls, these findings suggest that morning cortisol levels may be related to IC symptoms. Findings are consistent with a relationship of the HPA axis with processes underlying symptomatology in IC.

Source of funding: none