

Letter to the Editor

Using serum total cortisol assays overstates the adrenal insufficiency prevalence in cirrhotic patients

Dear Editor,

We read with great interest the manuscript of Ye et al¹ entitled "Clinical analysis of patients of cirrhosis complicated with adrenal insufficiency" and we think that some bias should be underlined.

The authors reported a prevalence of adrenal insufficiency (AI) of 27% in 118 hospitalized patients with cirrhosis¹.

The first limitation is that AI was defined as the basal level of cortisol < 138 nmol/L or basal ACTH level > 46 pg/mL whereas international guidelines recommend the 250 µg IV corticotropin stimulation (30 or 60 min) test to diagnose AI².

The second problematic point is that plasma cortisol is 80% bound to cortisol binding globulin (CBG) and 10-15% to albumin². It has been shown that serum total cortisol assays overstate the AI diagnosis in patients with a decrease in transport protein of cortisol³, and particularly in patients with cirrhosis⁴. In our study, using 250 µg corticotropin stimulation test in 88 patients with cirrhosis, we reported that AI prevalence was 9.1% using the salivary cortisol (gold standard reflecting the free plasma cortisol) whereas AI prevalence was overstated to 33% using serum total cortisol. Ye et al state that, in our study⁴, we reported that hypoalbuminemia was a major risk factor of AI but this is not what we found. In fact, we reported that hypoalbuminemia was a major risk factor of false positive diagnosis of AI by serum total cortisol assays⁴.

Patients with severe cirrhosis have a more pronounced decrease in albumin and CBG; therefore, it is not surprising that Le et al¹ reported that patients with AI had more severe cirrhosis.

To avoid this bias, the authors could have assessed the free plasma cortisol^{5,6} or the salivary cortisol⁴.

No randomized controlled study assessed if hydrocortisone replacement is needed in cirrhotic patients with AI. We wonder if Ye et al have treated included patients with abnormal base cortisol.

Conflict of Interest

The Authors declare that they have no conflict of interests.

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