

Reproducibility and performance of one or two samples of salivary cortisol in the diagnosis of Cushing's syndrome using an automated immunoassay system

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The purpose of this article is to evaluate the variability and reproducibility of late night salivary cortisol (LNSC) using electrochemiluminescence immunoassay (ECLIA) and compare the accuracy of one or two samples in diagnosis of Cushing's syndrome (CS). We prospectively included 64 healthy volunteers (HV), 35 patients with clinically suspected CS (S), and 26 patients with confirmed CS. Nine patients in the CS group had 24-h urinary free cortisol (UFC) less than two times the upper limit of normal (mild CS). UFC and two consecutive LNSC (LNSC1, LNSC2) were collected at home. All patients in the S group had normal UFC and low-dose dexamethasone suppression test. No differences were found between the HV and S groups in UFC, LNSC1, and LNSC2. Intraindividual variability between the two samples of LNSC was 22% in HV (1.6-91%), 32% in the S group (1.6-144%), and 51% (1.6-156%) in the CS group. Variability was higher in CS patients than those in the HV ($P < 0.001$) and S groups ($P = 0.05$).