LETTER TO THE EDITOR

Overnight dexamethasone suppression of cortisol is associated with radiocholesterol uptake patterns in adrenal incidentalomas

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Low-dose dexamethasone suppression is considered to be the most accurate test for diagnosing subclinical hypercortisolism (1–3). The recommended cut-off point for excluding the presence of Cushing's syndrome is a morning plasma cortisol concentration of less than 50 nmol/l after 1 mg dexamethasone. We read, with interest, the article by Valli *et al.* (4), who assessed the value of endocrine testing, as opposed to radiocholesterol scintigraphy, in diagnosing subclinical cortisol hypersecretion in a series of incidentally discovered adrenocortical adenomas. Patients showing unilateral uptake by their adrenal mass at scintigraphy had significantly lower adrenocorticotrophin levels, higher midnight levels of plasma cortisol, abnormalities of the cortisol diurnal rhythm, and higher cortisol concentrations after overnight administration of 1 mg and (i.v.) 4 mg dexamethasone than did patients with bilateral uptake. The sensitivity of the overnight 1 mg dexamethasone suppression test improved to 100% when the cut-off point for the morning plasma cortisol level was set at 60 nmol/l, rather than the classical value of 138 nmol/l.

In our population of patients with adrenal incidentaloma (5), we re-evaluated the accuracy of the 1 mg overnight dexamethasone suppression test by comparing the new cut-off point for plasma cortisol (50 nmol/l at 0800 h the following day) with adrenocortical scintigraphy. Out of 284 consecutive patients, 83 with unilateral scintigraphic uptake and histological

diagnosis of adrenocortical adenoma were selected. Adrenal scintiscans were performed using 11–14 MBq [⁷⁵Se]-Selenio-6 α -methyl-19norcholesterol (Scintadren; Amersham, Buckinghamshire, UK). Images were acquired at 72–120 h following tracer injection. Scintigraphic evaluation demonstrated various patterns of uptake: (i) exclusive uptake by the tumor without visualization of the contralateral gland (36 subjects); (ii) prevalent uptake by the tumor with visualization of the contralateral gland (28 subjects); (iii) bilateral symmetrical uptake (19 subjects). The results of the overnight dexamethasone suppression test demonstrated a strong association with scintigraphic uptake, and a continuous spectrum in adrenal autonomy (Table 1). Moreover, all patients with plasma cortisol levels above 138 nmol/l after dexamethasone showed exclusive uptake at scintigraphy. With a plasma cortisol cut-off point of 138 nmol/l, the sensitivity and specificity of the overnight dexamethasone suppression test for identifying subclinical cortisol-secreting adenomas (exclusive uptake) were 44% and 100% respectively. With a lowering of the cut-off point to 50 nmol/l, the sensitivity improved to 75%, but the specificity fell to 72%. Although the sensitivity of the test was lower in our experience, our data are in agreement with those of Valli *et al.* (4), confirming the usefulness of 1 mg overnight dexamethasone suppression, with revised criteria, as a screening test for subclinical hypercortisolism in patients with adrenal incidentaloma.

Table 1 Relationship between radiocholesterol uptake and morning plasma cortisol levels after administration of 1 mg dexamethasone overnight in 83 patients with unilateral adrenal incidentaloma.

Scintigraphic uptake	Morning levels of plasma cortisol after 1 mg dexamethasone overnight		
	No. of subjects (%) (<50 nmol/l)*	No. of subjects (%) (50–138 nmol/l)*	No. of subjects (%) (>138 nmol/l)*
Exclusive (<i>n</i> = 36)	9 (25)	11 (31)	16 (44)
Prevalent (<i>n</i> = 28)	16 (57)	12 (43)	0
Symmetrical (<i>n</i> = 19)	16 (84)	3 (16)	0

*Scintigraphic uptake versus postdexamethasone plasma cortisol: $P < 0.0001$, χ^2 test.

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