

Table 2. Hormonal evaluation of adrenal incidentalomas

Functional abnormalities	Recommended testing	Normal values	False positive results
Subclinical hypercortisolism	1. 1mg-dexamethasone suppression test	1. Serum cortisol <5 µg/dl (<138 nmol/l)	A. Decreased dexamethasone absorption
	2. 24h urinary free cortisol	2. 80–120 µg/24h (220–330 nmol/24h)	B. Drugs enhancing dexamethasone metabolism (barbiturates, phenytoin)
	3. Loss of normal diurnal rhythm of cortisol	3. Levels at 8pm ~25% of those at 8am	C. Estrogens
	4. Midnight salivary cortisol	4. <2.0 ng/ml (5.52 nmol/l)	D. Pregnancy
	5. 48h 2mg/d dexamethasone suppression test (or CRH-dexamethasone test)	5. Serum cortisol <1.8 µg/dl (<50 nmol/l) CRH test: 1.4 µg/dl (< 38 nmol/l)	E. Pseudo-Cushing's state (depression, alcohol)
	6. Midnight serum cortisol	6. <8.3 µg/dl (230.5 nmol/l)	
Silent pheochromocytoma	1. Plasma fractionated metanephrines	1. Normetanephrine <112 pg/ml, metanephrine <61 pg/ml	A. Clinical situations (cardiovascular-cerebrovascular events, alcohol or clonidine withdrawal, cocaine abuse)
	2. Plasma catecholamines	2. <500 pg/ml	B. Medications (tricyclic antidepressants, phenoxybenzamine, α ₁ -adrenoreceptor blockers, clonidine, methyl dopa)
	3. Urinary total metanephrines	3. <1.8 mg/24h	C. Sampling conditions
	4. Urinary catecholamines	4. Norepinephrine <170 µg/24h, epinephrine <35 µg/24h	D. Diet
	5. Urinary VMA	5. <11.0 mg/24h	
	6. Provocative and suppressive tests	6. Positive glucagon test: 3.0-fold increase and/or total plasma catecholamines >2000 pg/ml Normal clonidine test: >50% fall from baseline and/or <500 pg/ml	
	7. Chromogranin A	7. <100 ng/ml	
	8. Genetic testing		
Aldosterone producing adenoma	1. ALD/PRA ratio (ALD in ng/dl, PRA in ng/ml/h)	1. <20 (or <30 for others)	A. Drugs (β-blockers, calcium channel antagonists, ALD-receptor antagonists, loop diuretics)
	2. 24h urine ALD after salt loading	2. <27.7 nmol/d (<12 µg/d with sodium <200 mmol/d)	B. Renal impairment
	3. Plasma ALD after i.v. saline infusion test	3. <277.4 pmol/l (or <10 ng/dl)	
	4. Plasma ALD after FST	4. <166 pmol/l (<6 ng/dl)	
	5. 18-OH corticosterone	5. <2.76 nmol/l (<100 ng/dl)	
	6. Adrenal venous sampling		
	7. Posture stimulation test		

CRH: Corticotropin Releasing Hormone, PHEO: Pheochromocytoma, VMA: Vanillyl-Mandelic Acid, ALD: Aldosterone, PRA: Plasma Renin Activity, FST: Fludrocortisone Suppression Test