

Biochemical diagnosis of pheochromocytoma

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Recommendations from the First International Symposium on Pheochromocytoma, held in October 2005, indicate that among biochemical tests useful for diagnosis of pheochromocytoma the first-line test should be measurement of plasma or urinary fractionated metanephrines [1]. Previous results show that these biochemical tests are connected with higher specificity and sensitivity compared with others [2]. According to various studies, the sensitivity was from 95 to 100% for fractionated plasma metanephrines and from 90 to 97% for fractionated urinary metanephrines. The specificity was also quite good, ranging from 85 to 95% for fractionated plasma metanephrines and from 69 to 99% for fractionated urinary metanephrines [3-6]. Measurement of fractionated plasma metanephrines should be preferred especially in patients with familial endocrine syndromes [4]. Moreover, in the case of sporadic tumour diagnostic efficacy of fractionated plasma metanephrines measurement alone is the same as measurement of total concentration of metanephrines and fractionated catecholamines in urine at the same time [4]. Plasma fractionated metanephrine levels within the normal range exclude the presence of pheochromocytoma. On the other hand, diagnosis of pheochromocytoma based on increased concentrations of plasma fractionated metanephrines does not need to be confirmed with additional biochemical tests (in 80% of cases) [7]. This test allows one to predict size of tumour and location (adrenal gland or behind it) [5]. In the case of a choice of one of the metanephrines (metanephrine or normetanephrine) measurement of plasma normetanephrine is recommended as the best single biochemical test [3, 5, 6].

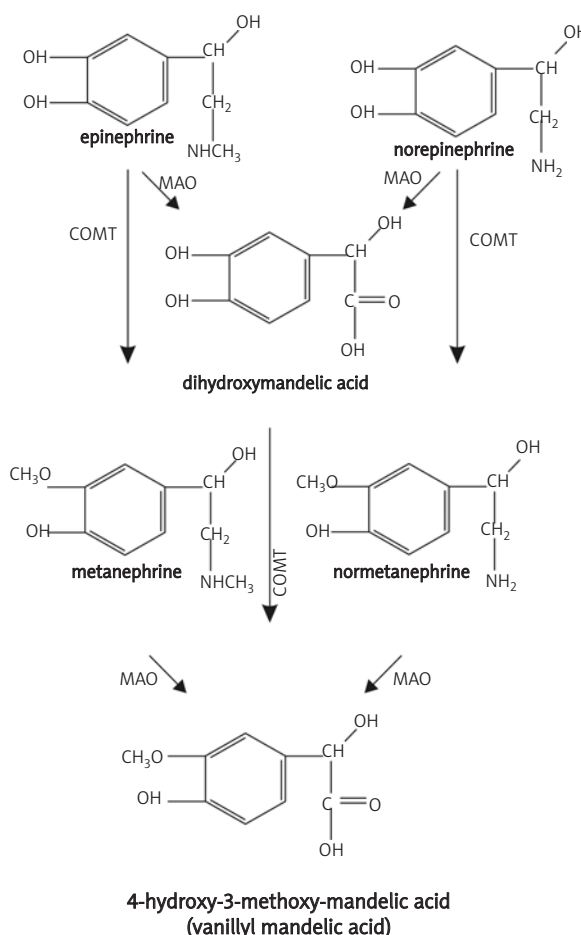


Figure 1. Biochemical pathways of catecholamine metabolism in humans [Pol J Endocrinol 2006; 1: 57, modified]

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