

1978

PROC ENDOCR SOC
1978; 60: 394

THE ENDOCRINE SOCIETY

634 A NEW MECHANISM FOR NORMOTENSIVE PHEOCHROMOCYTOMAS. J.M. Feldman, J.A. Blalock*, R.T. Zern*, J.D. Shelburne*, J.T. Gaede*, R. Farrell* and S.A. Wells, Jr. Departments of Medicine, Pathology and Surgery, Duke University Medical Center, Durham, N.C. 27710.

The majority of patients with pheochromocytomas (P) have either sustained or episodic hypertension due to excessive catecholamine secretion from their tumors; occasional patients with these tumors are normotensive. We recently evaluated a 28 yr old man with a 7 month history of abdominal pain and L suprarenal mass. Daily blood pressures during 5 wks of hospitalization were all normal. The patient had elevated urinary norepinephrine (NE)(250ug/d), vanilylmandelic acid (8.5mg/d) and homovanillic acid (HVA)(21.5mg/d) excretion. A L adrenal and R extraadrenal P were resected. On light microscopy, both tumors were typical P; however, only occasional cells had a positive chromaffin reaction. Electron microscopy of both tumors showed electron dense neurosecretory granules with the typical appearance of NE. The table compares the P of this patient with P resected from 4 patients with hypertension (1 unilateral, 3 bilateral). These patients differed by having normal HVA excretion (\bar{X} =4.2mg, range=3.3-4.8). Although the P of the normotensive patient contained substantial amounts of dopamine (DA), the NE and E content was low. This was due to a marked deficiency of dopamine B-hydroxylase (DBH) and phenylethanolamine-N-methyltransferase (PNMT). Mixing experiments showed no enzyme inhibitors in the tumors. The large amount of HVA in the pre-op urine of the normotensive P patient suggests his tumor was secreting DA. Despite substantial amounts of the intermediate DA in the tumors of hypertensive P patients, their normal HVA excretion suggests that their P do not secrete DA. One mechanism for the absence of hypertension in P is a deficiency of DBH, with a resulting increased DA and decreased NE secretion.

	Wt (g)	DA (ug/g)	DBH (nm/min/mg)	NE (ug/g)	PNMT (pm/min/mg)	E (ug/g)
Normotensive Pheo						
Right	15	209	0.8	11	7	0
Left	160	261	0.4	4	3	0
Hypertensive Pheos						
Mean	39	922	14.0	4263	62	1150
(Range)	(1.8-113)	(406-1460)	(3.5-30.3)	(1241-8747)	(18-130)	(0-2530)

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635 PROTEIN IODINATION IN THE BREAST AND THYROID OF RATS. B.A. Eskin, C.E. Sparks*, B. LaMont*, and D. Kolansky*. Department of Ob/Gyn, Biochemistry and Physiology, Medical College of Pennsylvania, Philadelphia, Pennsylvania 19129.

We have measured ¹²⁵I iodide uptake and protein iodination in normal and lactating breasts and respective thyroids of rats *in vivo*. The organ homogenates were analyzed by gel filtration column chromatography in the presence of sodium dodecyl sulfate (SDS) two hours after I.V. injection of 3-6 μCi ¹²⁵I iodide. The protein subunit molecular size was determined by both gel filtration and polyacrylamide gel electrophoresis in SDS.

There was uptake (expressed as percent of injected ¹²⁵I iodide) of 4.1 ± 1.5% (SEM) and 5.1 ± 1.4% in the thyroids of control and lactating rats and 0.2 ± 0.1% compared to 6.7 ± 1.7% in the control and lactating breasts. Using ⁵¹Cr dilution techniques to measure vascularity, we estimate more than 95% of the tissue ¹²⁵I radioactivity was extravascular. Lactating breast weighs 2.0 gms and the control 0.8 gms. The following chart shows the percent distribution of tissue ¹²⁵I radioactivity. Column 1 represents iodide; columns 2 and 3 represent protein subunit molecular size ranges in daltons:

	¹²⁵ I-iodide	1,000-50,000	> 50,000
Thyroid (control)	9.0 ± 1.0	15.5 ± 2.5	75.5 ± 3.5
Thyroid (lactating)	11.8 ± 0.6	15.0 ± 0.7	73.3 ± 1.0
Breast (control)	99.0 ± 0.5	0.5 ± 0.3	0
Breast (lactating)	80.2 ± 5.7	19.8 ± 5.7	0

There was uptake of injected ¹²⁵I iodide into lactating breast tissue and organification to a protein of 10-20,000 daltons in subunit size. In contrast, the thyroid organified most of the ¹²⁵I iodide to a protein larger than 100,000 daltons (thyroglobulin) but 15% was to a 10-20,000 dalton protein. Iodinated protein did not appear in the serum. The percent of injected radioactivity remaining in the serum was 13.6 ± 1.6 in the controls compared to 12.4 ± 3.0 in the lactating animals. Rapid uptake and organification of iodide may be an important function of active breast tissue. (CA 14705, HL 19168)

636 THE USE OF PLASMA ADRENAL HYPERPLASIA of Pediatrics, Therapy of amount of urine may be problematical pubertal children had determinations periodically ovography and menses considered in growth and bone maturation Patients in poor increased signs of concentrations are in the poorly controlled also had T T did not correlate was not as useful monitoring Δ concentration

Normal Range (ng Type of Control # of Determinations Mean ± SD (ng/dl Range (ng/dl)

*p<0.005 (in

637 ACTION OF GLUCOCYTES: EFFECTS ON Anatomy, University Previous work adrenalectomized plasmic reticulum suggested that the placed in SER membrane deposition. In the with puromycin in liver cells was given a single injection + DEX. Six rats hormone administration crosscopy and from of all groups of ADX rats the hepatic 6 hrs. a level of injected with DE: untreated with DE overnight fasted treatment with DE associated with the after hormone administration numerous tubules are were found in hepatocytes those from overnight experiments that upon protein synthesis or to the ac USPHS grant #AM-1