motensive rats. Evidence is summarized indicating that an exaggerated natriuresis after an acute salt load in the hypertensive rat is not constantly present, and it was proposed that the phenomenon might be related to altered tubular structure. Evidence from other workers indicates that ADH secretion is enhanced by a high salt diet and this may play a role in the response to a salt load in rats.

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Uremic Serum Inhibition of Renal Paraaminohippurate Transport. (31474)

ABRAHAM G. WHITE

Department of Medicine, Harlem Hospital Center and Columbia University School of Public Health and Administrative Medicine, New York City.

The effects of renal insufficiency, including uremia, on various organ systems are well-known(1). Nevertheless, little attention has been paid to the possible effects of renal insufficiency on the kidney itself. The studies described in the report represent an initial exploration of this possibility(2).

White rats, weighing approximately 150 g, had both kidneys removed under ether anesthesia. Forty-eight hours later, they were sacrificed by decapitation. Each series of experiments was performed with a pooled collection of uremic serum, as well as with a pooled collection of normal serum. The BUN of rat uremic serum ranged from 240 to 312 mg%.

TABLE I. Effect of Rat Uremic or Normal Serum on Uptake (S/M Ratios) of Paraaminohippurate by Normal Rat Kidney Cortex Slices.*

Rat serum	(Dilutions of serum) (1:12)	(1:6)	(1:3)	Control
None				6.1 ± .31 (n = 14)
Uremic	4.6 ± .41	3.9 ± .49	2.6 ± .24	
Normal	8.0 ± .58	8.3 ± .71	8.7 ± .71	
U/N (%)†	57.3 ± 2.97 (n = 11 pairs)	44.2 ± 4.02 (n = 11 pairs)	27.6 ± 2.99 (n = 11 pairs)	

* Values are means ± standard error of mean.
† U = S/M with uremic serum; N = S/M with normal serum; (U/N) × 100 = U/N (%).

Cortical slices from one normal rat kidney were used for each paired study at a given dilution (in Cross-Taggart medium) of rat uremic and normal serum. General methods of study have been described(3). All experiments were performed at 28°C with oxygen as the gas phase, the Warburg apparatus being used when Q_{O_2} measurements were made, and the Dubnoff apparatus in all other experiments. Each flask contained a final volume of 3.0 ml medium (Cross-Taggart medium alone or with designated amounts of normal or uremic serum). Total incubation time was 75 minutes in all experiments.

The uptake of paraaminohippurate (PAH) is expressed as the S/M ratio, where S equals the concentration of PAH (μg/g) in renal tissue and M equals the concentration of PAH (μg/ml) in the medium. All S/M ratios greater than 1.0 are considered to represent active transport of PAH from medium to renal tissue. The results of all paired experiments comparing the effects of uremic and normal serum are expressed as (U/N) × 100, where U equals the S/M ratio in the presence of uremic serum and N equals the S/M ratio in the presence of the same dilution of normal serum.

Results of the experiments are summarized in Table I. Plotting the mean U/N (%) values against the logarithms of the volume of serum per flask yields a straight line.

With rat uremic serum, the depression of PAH uptake was not associated with any depression of the oxygen consumption (Q_{O_2}) by renal slices. Nor was the inhibition of PAH uptake by rat uremic serum correlated with changes in the pH of the ambient medium.

Summary. Rat uremic serum depressed the uptake of paraaminohippurate (PAH) by normal rat kidney cortex slices, while rat normal serum increased the uptake of PAH.

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