

hypertensive, TENa per lean body mass was above the normal range, and this percentage reduced to 28.5 per cent by thiazide therapy. (4) This feature was more clearly observed in relation with TENa to ECW: 80 per cent of the non-treated hypertensive was above the normal range, while this figure reduced to 28.0 per cent by thiazide therapy. (5) It was, however, difficult to find out a direct relation-

ship between the value of TENa per ECW and the degree of high blood pressure. (6) Ratio between plasma volume to ECW and/or between ECW to TBW did not illustrate any significant difference among the materials.

Conclusions: It is reasonable to observe sodium disturbance in the hypertensive in relation with TENa to extracellular water.

Studies on Changes of Body Fluids Distribution during Peritoneal Dialysis (I)

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In recent years peritoneal dialysis and hemodialysis by artificial kidney are effective for treatment of renal insufficiency. We have studied changes of body fluid compartments and chemical findings during dialysis.

0.3 mc HTO, 30 μ c ^{22}Na and 1.5 g PAH were injected intravenously, and appearance rate in dialysate by peritoneal dialysis and ascites by carcinomatous peritonitis were examined. The determination of HTO concentration was made with liquid scintillation counter, and ^{22}Na with Well type scintillation counter. The concentration ratio 1 hour after intravenous injection between dialysate and ascites and plasma were HTO ca 50%, ^{22}Na ca 20% and PAH ca 30%. These ratio were lower in ascites than in dialysate.

The concentration ratio of HTO, ^{22}Na and PAH in plasma 1 hour after intraperitoneal

injection were HTO ca 40%, ^{22}Na 20% and PAH under 5%.

The appearance rate of HTO, ^{22}Na and PAH in dialysate were compared with other chemical materials. HTO was almost equal with urea N, creatinine, uric acid and K. PAH and ^{22}Na were lower than these chemical materials.

Changes of body fluid compartments before and after peritoneal dialysis were studied with HTO, ^{22}Na and ^{51}Cr . HTO and ^{22}Na were injected intravenously 12 hours before dialysis, and ^{51}Cr was injected direct before and after dialysis. Total body fluid, extracellular fluid and circulating plasma volume were reduced after peritoneal dialysis. In edematous cases the reduction of extracellular fluid was prominent.

Studies on Changes of Body Fluids Distribution Produced by Surgical Operation (I)

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Changes in water-electrolyte balance brought about by surgical operation have been the object of many investigators. Isotopic methods

are newer addition to the armamentarium in the study in this area and assure greater accuracy and convenience.