

zoate) was tested for vasodilatability in the dog femoral circulation with the following modifications: Renografin 60 with sodium 15-1, potassium 5.6, and calcium 5.0 mEq/l, respectively; Renografin 60 plus varying concentrations of calcium, and Renografin 60 plus varying amounts of Angiotensin II. Mean blood flow rate was monitored with an electromagnetic flow probe and the response expressed as a ratio of the baseline flow. It was found that the balanced cation solution decreased the ratio from 2.10 ± 0.13 (mean \pm S.E.M.) for Renografin 60 to 1.93 ± 0.10 . Calcium additions decreased vasodilation in proportion to concentration up to the limit of solubility, $1.36 \pm .09$. Angiotensin II completely blocked vasodilation, $0.51 \pm .09$. The possible mechanism of the response will be discussed.

Cerebrospinal Fluid Iodine Levels after Uncomplicated and Complicated Angiography

MARK M. MISHKIN, STANLEY BAUM, LARRY NG,
AND GIOVANNI DICHIRO

University of Pennsylvania, Philadelphia, Pennsylvania

During the past 6 years, six patients have developed severe neurologic sequelae following aortography and/or selective visceral angiography. The literature makes frequent reference to this type of complication although the incidence is in the range of 0.2%.

In an attempt to evaluate this potentially catastrophic complication, cerebrospinal fluid iodine determinations have been made in patients undergoing various procedures using iodinated contrast material who have had no sequelae, and these have been compared with the cerebrospinal fluid iodine levels in some patients who have demonstrated this untoward reaction. There appears to be a significant difference in the cerebrospinal fluid iodine levels of this latter group of patients.

On the basis of this preliminary work, a suggested therapeutic regimen and a possible etiology will be offered.

Renal Arteriogram in an Acute Renal Failure Model: Evidence for Cortical Ischemia and Active Vasoconstriction

JEFFREY H. NEWHOUSE, MD, AND
NORMAN K. HOLLENBERG, MD

Harvard Medical School, Boston, Massachusetts

Attenuation of the cortical arteries, absence of a cortical nephrogram, and an increased contrast transit time are angiographic features common to acute renal failure states in man. These abnor-

malities, together with the changes seen in the xenon washout curve, have been interpreted as representing a diffuse, severe reduction in cortical perfusion sufficient to account for the renal failure. Direct evidence for such an interpretation of the arteriographic changes, however, is not available. The radioactive microsphere technique for assessing local tissue perfusion has made it possible to test the hypothesis directly in a canine model.

Sustained unilateral acute renal failure was induced in dogs by a 2-hour infusion of norepinephrine into one renal artery. One week later, the infused kidney was oliguric and had all the angiographic, hemodynamic, morphological, and functional characteristics of acute renal failure in man. Microspheres showed a 64% reduction in cortical perfusion, from a normal of 8.7% of cardiac output to 3.1% of cardiac output ($p < 0.015$).

The reduction in renal blood flow was confined to the renal cortex, and there was no evidence of diversion or shunting of flow to the medulla. Acetylcholine infused into the renal artery reversed the vascular abnormalities and the cortical flow reduction without inducing a diuresis.

We conclude that the angiographic changes seen in acute renal failure reflect decreased cortical perfusion, that no medullary shunt is present in this model, and that the vascular changes are due to active vasoconstriction.

¹²⁵I-Fibrinogen Clearance Rates as a Means To Detect Deep Vein Thrombosis

COLIN N. LUTHI, MD, EDWARD A. SILVERSTEIN, PhD,
AND RICHARD A. HOLMES, MD

Medical College of Wisconsin, Milwaukee, Wisconsin

Studies were performed in patients to establish the correlation between precordial and blood ¹²⁵I fibrinogen clearance rates and their relationship to the presence of lower extremity deep vein thrombosis.

Commercially obtained ¹²⁵I-fibrinogen in 100 microcurie doses was administered to 25 patients and the precordial and extremity counts were recorded using a sodium iodide crystal detector and a portable scaler. Comparative clearance rates in 5 patients with negative fibrinogen leg counts and 5 patients with venographic documented deep vein thrombi and positive fibrinogen leg counts were almost identical. A bi-exponential curve suggesting two fibrinogen pools was obtained on practically each patient.

The findings support the validity of precordial counts to measure blood clearance rates of ¹²⁵I fibrinogen but discourages the usefulness of the clearance rates as a means of detecting organized deep vein thrombosis.