

families are needed for the statistical approach to the problem. In order to obtain the most information regarding maternal or paternal nondisjunction, the simultaneous determination of color blindness, Xg blood group, and G-6-PD deficiency, known to have polymorphic frequency in Greece, have been studied in 10 patients with XO Turner's syndrome and their available parents. Four families were informative. In the first the patient was Xg (a+) and the mother Xg (a-). In the second the patient and the father were G-6-PD deficient, while the mother was normal. Clearly in these two families the single X was of paternal origin. In a third family the patient was color-blind and the mother had normal color vision, and in the fourth the patient was Xg (a-) while her mother was Xg (a+). Unfortunately, in both cases the father was dead and since these two sex-linked characters cannot be detected in the heterozygous state the origin of the single X could not be located. Clearly the inclusion in this type of study of an X-linked trait which can be detected in the heterozygous condition is advantageous, as has been shown in the first family.

47. Clinical and experimental relationship between liver lymphatics and bile flow. O. AAGENAES, H. SIGSTAD, B. CUDERMAN, W. KRIVET, and H. SHARP. *Univ. of Oslo, Norway, and Univ. of Minnesota, Minneapolis, USA.*

A syndrome with cholestasis in infancy and recurrent cholestasis and edema in the lower extremities in adulthood was presented in this Society in 1967. Further studies in our now 22 patients with this syndrome have shown that these children have abnormal lymph vessels in the legs before development of edema, and the cause of the edema is probably a congenital lymph vessel hypoplasia. A liver lymphangiography with Au<sup>198</sup> in one adult patient with no cholestasis at time of examination failed to show the normal clearance of the radioactive gold to the thoracic lymph nodes. To study the relationship between liver lymph flow and bile flow, an experimental animal model was devised: all lymph nodes draining the liver were obstructed in cats while control animals were sham-operated. In one group of cats, the bile flow was studied shortly after the lymph obstruction, in another group 1 day later, and in yet another group 2 days later. The bile flow was the same in the lymph-obstructed and the sham-operated groups of cats studied on the day of lymph obstruction; in the lymph-obstructed cats studied 24 hr after lymph obstruction the bile flow was about 70% higher and the bile acid excretion more than 100% higher than in the sham-operated group. Forty-eight hours after the lymph obstruction, the bile flow was only slightly elevated in the lymph-obstructed group. Following the bile flow study an electron-dense material (lanthanum) was injected in the common bile duct, and biopsies from different parts of the liver were studied in the electron microscope. The injected lanthanum could be traced from the bile canaliculi to the intercellular spaces and to the Disse's spaces. The findings of this intimate relationship, both anatomically and functionally between the liver lymphatics and the biliary tree, compared with the clinical findings of abnormal peripheral lymphatics and an abnormal liver lymphangiography, indicate that a lymph anomaly in the liver may be the cause of the cholestasis in these patients.

48. Value of color scintiscanning in the diagnosis of cerebral, renal, and hepatic neoplasias in pediatrics. G. C. MUSSA, M. MARTINI MAURI and D. BACOLLA. *Univ. of Turin, Italy.*

New high sensitivity apparatus and particularly the discovery of pure gamma-emitting, low energy, short half-life radioisotopes have brought the use of radioisotope techniques, especially

scintiscanning, within the orbit of paediatric diagnosis. Here, a series of color scintiscans is presented, the children in question having been admitted for suspected cerebral, renal, and hepatic neoplasias. Tc<sup>99m</sup> was used for the cerebral scans, colloidal Tc<sup>99m</sup> sulfide for the hepatic, and Chlormerodrin Hg<sup>203</sup> for the renal. The cerebral scintiscanning was performed on 25 children with suspected intracranial neoplasia. Seventy-six per cent of all cerebral tumours encountered were correctly localized. Within this percentage, the success rate with supratentorial tumors was 100% and with subtentorial 61.5%. Renal scintiscanning proves to be of particular value in the diagnosis of primary and metastatic tumors. While urography is an important tool for evaluating the morphology of the excretory cavities of the kidney, scintiscanning studies parenchyma conditions. Using colloidal Tc<sup>99m</sup> which is localized by choice in the hepatosplenic reticuloendothelium, it is possible to detect the presence of primary hepatic tumors or metastases, if any. Findings showed that: (1) there are no particular contraindications to the use of scanning because the technique is free from toxicity, harmless, painless, and easy to use; (2) in pediatric age and, above all, in the early months of life, scanning makes it possible to solve diagnostic problems which in its absence would require much more laborious, traumatizing techniques; (3) with scanning, the effects of antitlastic therapy may be followed up over a period of time.

49. Changes in angiotensin II-like activity in arterial blood induced by hemorrhage in immature and adult rabbits. F. BROUGHTON-PIPKIN, J. C. MOTT, and N. R. C. ROBERTSON. *Nuffield Inst. for Med. Res., Oxford, England.*

The conclusion [1] that the presence of the kidneys may be more important in the regulation of arterial pressure in immature than adult rabbits suggested the desirability of measuring changes of angiotensin II-like activity in arterial blood in response to hemorrhage. Angiotensin II-like activity was measured by the shortening of a rat's ascending colon, irrigated intraluminally with pronethalol 1 mg/ml/min. The colon was superfused with arterial blood from the rabbit in an external circuit, from which the blood was returned to a jugular vein [2]. The colon was calibrated by infusion of Hypertensin (Ciba) before withdrawal of 25% of the rabbit's calculated blood volume. After 30 min, the blood volume was restored with dextran and the calibration were repeated. Angiotensin II-like activity developing during hemorrhage in 6 adult rabbits was equivalent to  $0.31 \pm 0.07$  ng/ml Hypertensin, whereas that in 10 immature rabbits averaged  $1.76 \pm 0.41$  ng/ml ( $P < 0.025$ ). Although Hypertensin is inactivated slightly less rapidly in immature rabbits, the difference is insufficient to account for the very much greater rise in angiotensin II-like activity seen during hemorrhage in immature than in adult rabbits.

1. MOTT, J. C.: *J. Physiol.*, 202: 25 (1969).

2. VANE, J. R.: *Brit. J. Pharmacol. Chemother.*, 35: 209 (1969).

50. Clinical and genetic examinations in hypophosphatasia. K. MÉNES and L. KLUBER. *University Med. Sch., Pécs, Hungary.*

A 5-year-old boy with typical clinical and biochemical findings of hypophosphatasia of the late infantile-juvenile type has been observed. The patient's acid-base regulation and renal functions, such as glomerular filtration, concentration and acidifying capacity, proved to be normal; however, the tubular reabsorption of phosphates was impaired.

The paternal grandparents of the propositus were second and the maternal grand-grandparents third cousins. As to serum