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Michael R. Shier et al. from Wayne State University School of Medicine, Detroit, discussed the problem of "Renal function and the post-resuscitative hypertension syndrome." Eighteen patients who had been severely injured had renal function studies performed following resuscitation. This study was designed because of the known post-resuscitative hypertension syndrome which is thought to be associated with hypervolaemia secondary to mobilization of sequestered sodium and water and with some degree of renal tubular insufficiency. His results show that the hypertension syndrome is associated with an increase in renal vascular resistance, most likely due to post-glomerular vasoconstriction. Since the renin levels were normal both in peripheral blood and in the renal vein, the renin-angiotensin system seems not to be responsible for the observed elevated blood pressures. The syndrome rather seems to be due to an increased vascular sensitivity to circulating catecholamines.

Edward M. Copeland, III from the University of Texas Medical School at Houston discussed the problem of "Hyperalimentation and immune competence in cancer." A group of 47 patients with cancer were evaluated with regard to their immune response to intradermal injections of Dermatophytin-O, Streptokinase-Streptodornase, mumps, and purified protein derivative (PPD) antigens during the administration of i. v. hyperalimentation. During the study the patients were treated by chemotherapy, radiation therapy, surgery or supportive therapy. Threequarters of the patients who received chemotherapy developed positive skin tests during hyperalimentation and only these patients responded to chemotherapy. It was stressed that patients whose immunosuppression was attributed to chemotherapy and due to malnutrition caused by gastro-intestinal toxicity returned to immune competence when an adequate nutritional status could be obtained. None of the patients became immune competent while receiving radiation treatment. It is speculated that i. v. hyperalimentation should be given to the patient receiving radiation treatment to obtain immune competency.

William J. Catalona from Johns Hopkins Hospital in Baltimore discussed the "Specificity of in vitro cellular cytotoxicity against transitional cell carcinoma cell line T-24." Lymphocytes from patients with transitional cell carcinoma, carcinoma of the prostate and colon and nine patients with benign pathology were tested for in vitro cytotoxicity activity against the T-24 cell line which had been established by Bubedik. None of the patients tested had received any kind of therapy within one year of testing. Significant in vitro cytotoxicity was observed in half of the patients with Stage 1 or 2 transitional cell carcinoma and in 37 percent of the patients with no transitional cell carcinoma. However, 33 percent of the control group also exhibited cytotoxicity against the T-24 cell line. This report confirms that cross-reacting transitional cell specific antigens exist in humans since over 70 percent of the patients with transitional cell carcinoma also showed significant cytotoxicity against an established melanoma line (H894).

Moritz M. Ziegler from the Institute for Cancer Research in Philadelphia discussed the problem of "Regional lymphadenectomy and varied tumour antigenicity" by using methylcholanthrene induced tumours in female mice of Balb/C x DBA/2 origin. He tried to evaluate the role of regional lymph nodes and whether it is dependent on tumour antigenicity. Three groups were studied: (1) Unilateral lymphadenectomy prior to tumour challenge. (2) Sham operated (3) No operation prior to tumour injection. The results were related to the strengths of antigenicity. Since no difference could be observed between the groups, it seems that the role of regional lymph nodes in the host-tumour relationship is not dependent on tumour antigenicity.

Frank B. Cerra of the State University of New York at Buffalo discussed the "Structural injury produced by pulsatile perfusion v. cold storage renal preservation." Renal

preservation techniques have been discussed critically following Teresaki's report concerning the adverse effect of pulsatile perfusion on renal allografts. The authors studied a group of canine kidneys with pulsatile perfusion (Belzer) using standard perfusate and a mean pressure of 60 mm Hg. A second group was studied with a mean pressure of 30 mm Hg. A third group of kidney was preserved for 24 h by the cold storage technique in Collins' 4 solution or the Plasma/albumin solution used for the pulsatile perfusion group. After a 24 h period proximal tubular damage was evident in all groups independent of the mode of preservation. Glomerular changes and weight gain were more evident in the kidneys which were perfused at higher pressures. Since only minor changes of this kind were observed in the group of kidneys stored in cold solution, mechanical effects caused by pulsatile perfusion appeared to be responsible for these changes.

Charles H. Wilson et al. from the Medical College of Virginia in Richmond cited "Factors in the low incidence of arteriosclerosis in long surviving renal transplant recipients." He found that both clinically and at autopsy there seems to be a lower rate of arteriosclerosis in long-term renal transplantation survivors as well as a low rate of arteriosclerosis deaths in patients surviving two to eight years post-transplantation as compared to patients on haemodialysis. Almost all of the long-surviving transplant recipients were normotensive, and only a few required antihypertensive agents. Only 24 percent of the long-surviving transplant recipients had elevated serum triglycerides, and only 6 percent had elevated serum cholesterol levels. In presenting the data, he stressed that renal transplant recipients in their second year after transplantation show no trend towards an increased rate of clinical arteriosclerosis or arteriosclerosis related death rate. It seems that lower blood pressures and lower serum triglyceride levels are important factors.

Arlo S. Hermreck from the University of Kansas Medical Center in Kansas City discussed the "Long term effects of warm ischaemic injury on the kidney." His presentation focused on the long term effects of warm ischaemia on morphology and function of the kidney in the presence of a normally functioning contralateral kidney. Interruption of blood flow of the kidney for 60 min in one or both kidneys resulted in no alteration in renal function mass or histology at six weeks in mongrel dogs. However, severe renal dysfunction associated with atrophy and fibrosis occurs when the renal pedicle is clamped for more than 90 min with the contralateral kidney being left intact. This is in contrast to the fact that when both kidneys are clamped for the same time period all the above parameters are normal at six weeks. It is unclear how an intact kidney can induce progressive atrophy and dysfunction in the opposite kidney with a reversible injury. It seems that the counter-balance phenomenon can be counteracted by excluding the contralateral kidney.

Dr. Roman Nowygrod et al. from the University of Minnesota discussed the "Role of concanavalin A in modulating renal antigens by assessing it with mixed lymphocyte culture studies". Since perfusion of the allograft prior to revascularization is associated with prolongation of allograft survival, mixed lymphocyte culture responsiveness in canine recipients of perfused kidneys was measured. The depression of T-cell responsiveness in con-A treated allograft recipients was observed and seems to be donor specific.

Dr. Louis H. Toledo-Pereyra also from the University of Minnesota Medical School in Minneapolis discussed the "Modification of immunogenicity on kidney allografts treated with acid mucopolysaccharides." Modification of graft immunogenicity has been achieved by perfusion in vitro with antilymphocyte globulin, phytohaemoglutinin, concanavalin-A and now with mucopolysaccharides. Significant survival of canine recipients of kidneys pretreated with Chondroitinsulphate at 25 mg/L of perfusate was achieved. It is speculated that this is due to a coating of transplantation antigens with non-antigenic mucopolysaccharides. It is stressed that the reduced immunogenicity of the allograft in combination with supplementary immunosuppression will result in significant prolongation of renal allografts which also might be valuable in the clinical situation.

Dr. S. N. Chatterjee et al. from the University of Southern California Medical Center in Los Angeles discussed the "Use of cellular membrane stabilizers to prevent ischaemic damage to the kidneys." The value of i. v. methylprednisolone given at least 2 to 2 1/2 h prior to harvesting of the kidney has been demonstrated by Miller and Starling. In this study Allopurinol and methylprednisolone were given to the donor prior to harvesting. Three groups of dogs were studied. The animals received Allopurinol as tablets 100 mg/kg orally on the day before surgery and continuing daily until the seventh postoperative day. In addition, they received 100 mg/kg of Allopurinol i. v. at time of harvesting. In the other experimental group, animals received 60 mg/kg of methylprednisolone i. v. 1 1/2 h prior to harvesting. In the control group, as in the two experimental groups, renal pedicle and ureter were completely occluded for a period of two hours. Significantly lower creatinine values were obtained after release of the clamps in

the Allopurinol group. It is speculated that the inhibition of Xanthine oxidase prevents substrate loss to uric acid which might then be available to be utilized for high energy compound resynthesis. Most consistent and best results were obtained with the use of methylprednisolone which probably acts by stabilizing lysosome membranes.

G. M. Collins from the University of California School of Medicine in San Diego discussed "Forty-eight hour storage of kidneys: importance of flush solution cation content." This study was designed to determine the role of cation content in cellular energy conservation by studying total adenine nucleotide and the quality of renal function following a 48 h hypothermia kidney storage. Different solutions were used, the best overall results being achieved when an intracellular type of solution was used containing 10 meq of Na^+, 115 meq of K^+, and 30 meq of Mg^{++}/L. Solutions with high sodium content and containing magnesium. (120 meq Na^+ 5 meq of K^+, 30 meq of Mg^{++}) produced better results than similar solutions without Magnesium. All solutions had an osmolarity of 320 mosm/kg. It is stressed that elevated K^+ and Mg^{++} contents are important factors in the mode of action of intracellular fluid like flush solutions and that they parallel the conservation of high energy phosphates.

Sang I.Cho from the Boston Veterans Administration Hospital discussed "Graft survival of perfused versus non-perfused cadaver kidneys." Survival rates of cadaveric kidneys which are maintained by pulsatile perfusion or hypothermic storage are controversial. Following recent communications by Clark, Terasaka and Moberg, Cho and associates preserved 98 cadaver kidneys by the non-perfusion method and 81 by the perfusion method. Although the incidence of acute tubular necrosis was high in the non-perfusion group, the difference was not statistically significant. In addition, there was no significant difference in graft survival at six months or at one year and two years between these two groups. However, it is felt that other advantages of continous perfusion in clinical transplantation continues to make it the preferred method of renal preservation.

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