Pre-morbid State of the Donor: A Factor in Successful Cadaver-Organ Allografting

To the Editor:

Successful outcome following organ allografting depends not only upon compatibility of recipient and donor and the clinical condition of the recipient, but also upon the events leading to the donor’s death. Numerous authors have emphasized exclusion of patients with septicemia, malignancy (except for that of the central nervous system), extremes of age, and primary renal disease as donors, and other authors have stressed the importance of ABO compatibility as well as more sophisticated tests of histocompatibility with a successful outcome of the transplant. In addition, care of the harvested donor organ is important and the method of preservation seems to influence the eventual result.

A cadaver donor is most frequently a patient who has suffered a neurologic death, but death proceeds at varying rates and frequently the kidney is removed following a prolonged period of hypotension, often with use of various stimulant drugs for the peripheral vascular system and heart. Frequently trauma to parts of the body other than the head is present. Adequacy of prior oxygenation of the patient is frequently in doubt, despite monitoring of blood pressure, perfusion pressure, $P_{O_2}$, $P_{CO_2}$, LDH, and hydrogen ion concentration and buffer base.

In a retrospective study of the hospital records of cadaver donors for the renal transplantation program at Baylor College of Medicine, it was found that a successful outcome of the transplant correlated as frequently with the pre-morbid state of the donor as with perfusion characteristics of the kidney when placed on a Belzer preservation apparatus, though in most cases kidneys removed after episodes of shock or cardiac arrest also perfuse poorly. Occasionally fair good perfusion characteristics were noted despite predictions of poor perfusion on the basis of the state of the donor. The use of such kidneys as allografts usually resulted in successful function, but frequently anuria was present for varying periods of time prior to diuresis, despite the addition of dibenzylcine to the pre-harvest regimen. On the other hand, when the kidney was removed from a stable donor, either a cadaver with a beating heart or one in which perfusion was maintained with no episode of hypotension prior to death, the results were good. Occasionally despite successful organ perfusion following harvest and fairly acceptable condition of the donor prior to death, a kidney fails to function.

It has been the impression of the authors that vasomotor instability of the kidney donor is frequently present, and vigorous efforts must be made to ensure adequate perfusion of the kidneys in situ prior to removal, despite the use of dibenzylcine on other agents in isolated organ perfusion. This matter is an important one to remember when the medical profession is faced with the problem of locating cadavers for organ transplantation. Cerebral death is a final common pathway arrived at by a variety of routes and at different velocities. There is clearly a need for increased investigation into the biology of dying, if the results of allografting of cadaver organs are to improve.

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Radiology Efficacy Study Launched

To the Editor:

An extensive efficacy study has been launched by the American College of Radiology to take an in-depth look at radiologic examinations. While the costs of diagnostic radiology are relatively simple to assess, the benefits to the patient of a diagnostic examination have been elusive to quantify; yet these must be ascertained to determine what diagnostic procedures are really worthwhile medically and economically.

Acting under an HEW contract, the ACR developed a methodology for measuring the diagnostic efficacy of 12,000 radiologic examinations given in emergency situations. With the data at hand, it is anticipated the efficacy of certain radiographic examinations in particular clinical settings, will be predictable. It may then be possible to advocate increased utilization of diagnostic efficacy, or to suggest decreased utilization in areas of expected low efficacy. In this way the costs of radiography may be minimized and expended in the most medically appropriate manner.

While it is recognized that there are reasons for requesting radiography other than diagnosis (evaluating progression of disease, for example) and that there are efficacies other than diagnostic (eg therapeutic efficacy), the current study should provide a foundation on which to build a far more stable evaluation of the usefulness of radiography than any framework that now exists.

For more information on the study, please contact Dr. Russell S. Bell, Project Director, Efficacy Study, American College of Radiology, 78 Main Street, P. O. Box 859, Tiburon, California 94920.

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