Volume 1 | Number 1 (Spring/Summer 2015)
www.jheaonline.org
ISSN 2474-2309
doi:10.224621/jhea.4.7161

MEDICAL COMMENTARY

End Stage Renal Disease

This article appeared originally in The Internet Journal of Catholic Bioethics (Spring 2011)

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Chronic renal disease is a characterized as a slowly evolving, progressive decline in renal function, usually over a period of months or years. Common causes, typically in those of African descent, include hypertension and diabetes. Patients with chronic renal disease subsequently have either slowly developing symptoms, or acute problems that are triggered by superimposed illness, trauma or some other physiologic stress. End stage renal disease marks the final point of progression in the spectrum of chronic kidney disease. Conventional therapies such as medications are not effective in treating end stage renal disease. At this point, renal function has diminished to such a low level that life threatening manifestations can occur without dialysis or transplant.

As renal function progressively deteriorates in the patient with chronic renal disease, the decision to begin dialysis is typically made in consultation with a nephrologist. This decision is usually based on laboratory markers used to assess renal function such as serum creatinine, glomerular filtration rate (GFR) and blood urea nitrogen level (BUN). In most instances, these patients are closely followed by their healthcare providers and routinely have these labs checked in an effort to trend their overall kidney function. This case is unique in that Mr. A's renal disease was not diagnosed until the final stage of progression when he presented to the emergency department in renal failure.

The patient with renal failure can present to the emergency department with a myriad of problems due to their condition. Electrolytes abnormalities, disturbances in acid-base balance, and congestive heart failure are frequent problems seen in these patients. The most common problem requiring emergent dialysis, particularly in the setting of end stage renal disease, is pulmonary edema secondary to volume overload. The swelling or edema noted in Mr. A's extremities is suggestive of this volume overloaded state.

Developed as a substitute for several functions of the normal kidney, dialysis can normalize fluid balance, correct electrolyte abnormalities and other solute abnormalities when the patient's kidneys are unable to complete these functions. The most common form of dialysis, hemodialysis, involves blood filtrations through a specialized permeable membrane that functions as an artificial kidney. This process requires specialized vascular access through either an arteriovenous graft, arteriovenous fistula or via central venous access. Patients typically receive treatments three days a week for approximately four hours per treatment at a specialized outpatient dialysis center.

Kidney transplant is a surgical intervention whereby a donor kidney is obtained and transferred to the patient. While many patients experience improvement with transplant, the procedure is not without consequence. Lifelong treatment with immunosuppressive medications is necessary to prevent the recipient's immune system from recognizing the donor organ as "foreign" and subsequently mounting a response against the transplanted kidney. In the year 2000, nearly 47,000 people in the United States were waiting for a kidney transplant. Because of a shortage of donor kidneys, each year only a small percentage of people who need a transplant actually receive a kidney. The wait for a donor kidney can take years.

As an illegal alien and uninsured patient, the option for Mr. A are limited. Kidney transplant is not an option. One proposed option is to discharge Mr. A with the caveat of having him return to the emergency department every three days for dialysis, the emergency department is not the appropriate place for chronic, long term care. Over the last decade, ER visits increased 26%. Meanwhile, the number of ERs declined 9%. Emergency Department (ED) crowding and higher ED complexity are associated with poorer quality of care for patients. As ED volume and number of patients requiring admission increased, odds of patients receiving appropriate and timely care have been shown to decrease. As emergency departments across the country continue to grasp with overcrowding, committing an emergency department bed for three to four hours of dialysis several times a week is not

an appropriate use of resources. Furthermore, the average cost for a visit to an emergency department is greater than outpatient care. According to a study of Emergency Departments in California, the average cost for an ER outpatient visit was $350, more than three times as much as the cost of a normal outpatient visit.

Clearly the medical issues surrounding the case of Mr. A are complex. The irreversible nature of the patient's disease process, the inevitability of continued decline without treatment as well as the complexities of arranging dialysis and transplant create a situation with no easy answer. In light of the continued demands on our nation's emergency care system, it would be irresponsible to knowingly contribute to the problems of care in our emergency departments.