Dialysis Discontinuation: Quo Vadis?

Fliss Murtagh, Lewis M. Cohen, and Michael J. Germain

Approximately 1 in 4 deaths of patients maintained on dialysis in the United States is preceded by a decision to discontinue treatment. Once considered to be a form of suicide, dialysis discontinuation is now increasingly common in most countries that are fortunate enough to offer renal replacement therapies. Given an aging and progressively sicker chronic kidney disease patient population, the rate of terminating dialysis is likely to increase. The literature on dialysis discontinuation includes studies principally from Canada, the United Kingdom, and the United States. The research is reviewed, critiqued, and examined to determine its relevance to practice. Future issues include the need to explore variability in dialysis practice as well as employment of a more patient-centered approach that is consistent with modern palliative medicine.

Index Words: Dialysis discontinuation; Dialysis withdrawal; Palliative medicine.

In 2006, 24.5% of deaths of patients maintained with dialysis in the United States were preceded by a decision to discontinue treatment.[1] Once conceptualized as being a form of suicide,[2] dialysis discontinuation is now considered to be an acceptable practice in most countries that are fortunate enough to be able to offer renal replacement therapies. The effective removal of entrance criteria for initiating treatment with dialysis has led to an older and sicker end-stage renal disease (ESRD) patient population. Patients endure not only the symptoms associated with dialysis but also those of increasing age and multiple comorbid illnesses, such as diabetes. During the past couple of decades, the countries of North America and Western Europe have shifted in their views on dying, and the default position no longer is to do everything possible to extend life while ignoring the amount of suffering or the financial and social costs of treatment. The literature on dialysis discontinuation includes studies conducted principally in Canada, the UK, and United States. Discontinuation of dialysis is a paradigmatic example of the cessation of life support. In the United States, the rate of dialysis termination before ESRD patient deaths has increased each year and is likely to continue increasing.[1]

Current Evidence and Practice

Dialysis withdrawal research has been conducted since the 1980s and now includes nearly 20 studies (Table 1). These have focused on a number of questions that are listed in Table 2.

Dialysis withdrawal occurs in 3% to 9% of the entire dialysis population. Most research conducted before 1996 analyzed dialysis withdrawal practice,[3-6] patient attitudes concerning withdrawal,[7,8] or psychiatric aspects of the withdrawal decision (namely, depression and suicidal ideation).[9] These were largely retrospective studies with the expected constraints on accuracy and detail and potential underascertainment of patient factors that this methodology entails. The largest of the studies was conducted in 1989 by Port and colleagues.[5] Using disease registry data, they examined 5,208 dialysis patients, of whom 282 died after withdrawal from dialysis. Because of the large size of this investigation, they were able to throw light on patient factors associated with withdrawal, including older age, Caucasian ethnicity, longer duration of dialysis, and diagnosis of hypertensive or diabetic nephropathy.

In 1996, Bajwa and colleagues[10] published the first prospective study on risk factors for dialysis discontinuation. Their work entailed collecting data over time from 235 dialysis patients. Data collection was prospective so ascertainment of patient factors was likely

From the Department of Palliative Care, Policy and Rehabilitation, King's College London, Weston Education Centre, London, United Kingdom; and Department of Psychiatry, Baystate Medical Center, Springfield, MA.

Address correspondence to Lewis M. Cohen, MD, Department of Psychiatry, Baystate Medical Center, S2669 Chestnut Street, Springfield, MA 01199. E-mail: lewis.cohen@bhs.org

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Table 1. Dialysis Withdrawal Research

Study, Authors, Year, and Location	*Focus of Study*	*Methods*	*Study Population, Denominator Population, and Comparison Group, if any*	*Findings*	*Critique and Relevance to Practice*
Rodin et al, 1981,[9] Canada	Psychiatric aspects of the decision to withdraw from dialysis.	Retrospective review of clinical records between 1976 and 1979, plus discussions with staff.	21 patients withdrawing from dialysis, out of 80 deaths in dialysis unit No comparisons made. No data on race.	Deaths after withdrawal of dialysis represented 26% of all deaths. Decision initiated by patient in 7 cases, by staff in 14 cases (of which 10 patients were judged not competent).	Clinical and ethical issues were described and discussed. No demographic or other description of study population was presented nor comparison with dialysis population to clarify practice or enable assessment of generalizability.
Neu and Kjellstrand, 1986,[3] US	Analysis of dialysis withdrawal practice.	Retrospective review of clinical records between 1966 and 1983, with minimum 1-year follow-up.	155 withdrawal patients out of 704 who died, from a population of 1,766 dialysis patients. No data on race.	9% (155/1766) died after dialysis withdrawal (22% of all deaths). Of those discontinuing, 50% lacked capacity; in 40%, the decision was initiated by doctor, and in 60%, decision initiated by patient or family. Older age and diabetes were associated with withdrawal. Survival: mean 8.1 days (±SD, 5.3; range, 1–29 days)	The first systematic attempt to analyze dialysis withdrawal practice. It reports practice between 1966 and 1983. Practice (and possibly decision making) has changed considerably since that time. Data were extracted from clinical records and likely subject to recording bias, with potential underascertainment of factors associated with dialysis withdrawal. This study raised considerable controversy; subsequent correspondence highlighted concern about the potential impact of such research on increasing withdrawal rates and showed widely differing practices in other units. It also stressed the importance of psychiatric assessment before withdrawal. The major contribution of this study was in describing withdrawal rates notably higher than previously evident from the disease registries, thus highlighting the underreporting to the registries. It also opened up the debate around withdrawal from dialysis. The factors described did not provide a clear predictive model for withdrawal, nor was it possible to elucidate precise reasons for withdrawal of dialysis, which were clearly complex.