



2019

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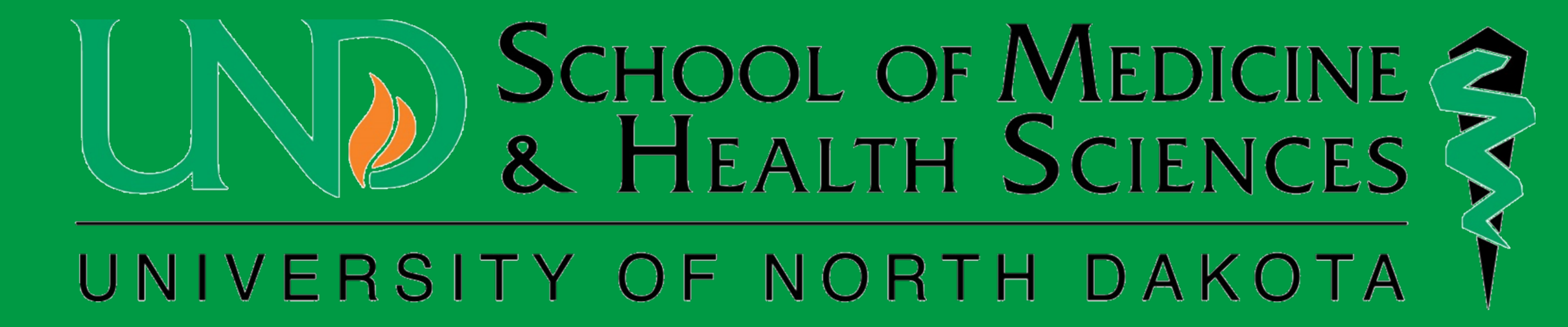
Rasmussen, Dane, "Comparison of Hemodialysis and Peritoneal Dialysis Outcomes in the Older Adult Patient" (2019). *Physician Assistant Scholarly Project Posters*. 219.
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Comparison of Hemodialysis and Peritoneal Dialysis Outcomes in the Older Adult Patient

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Abstract

- The objective of this research and systematic literature review was to determine the dialysis modality of choice for elderly patients with end-stage renal disease. This literature review compared the outcomes of hemodialysis and peritoneal dialysis, which was judged by morbidity, mortality, and quality of life.
- PubMed, Embase, and DynaMed were searched using a specific set of keywords and mesh headings. Results of the searches were then filtered to include human-only studies, patients over 65 years old, and published within the last ten years. There were 12 studies that met inclusion criteria and were selected.
- The studies suggested that there were similar outcomes in elderly patients receiving hemodialysis and peritoneal dialysis. It was concluded that dialysis modality selection should be made on an individual patient basis after first considering each patient's goals of healthcare, co-morbid conditions, and life experiences. The different dialysis modalities should be discussed between the provider and the patient in detail, and a joint decision can then be made.
- Lastly, barriers should be identified so that they can be overcome with proper education, counseling, and assistance. These steps will allow the patient to be successful with their selected dialysis modality.
- Keywords:** hemodialysis, peritoneal dialysis, dialysis, end-stage renal disease, morbidity, mortality, quality of life, elderly

Introduction

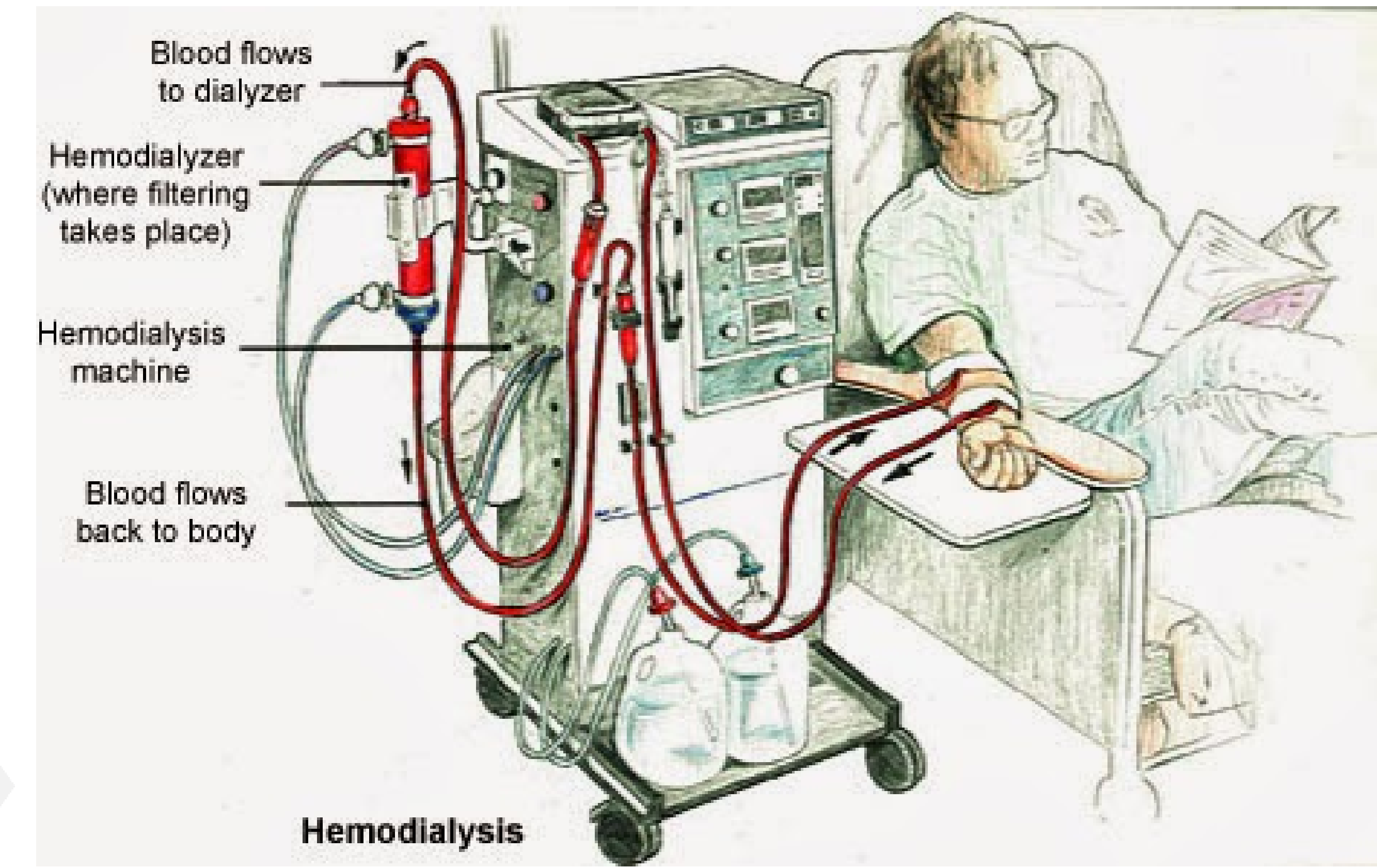
- In primary care, older adults comprise a large portion of the patient population.
- Many older adults have chronic kidney disease (CKD) that frequently progresses to End-Stage Renal Disease (ESRD) requiring renal transplant or dialysis.
- Older adults are often not candidates for renal transplant due to advanced age and other comorbid medical conditions.
- Hemodialysis (HD) and peritoneal dialysis (PD) are the most common modalities of dialysis.
- It is unclear if HD or PD provides better outcomes in the older adult patient with ESRD.

Statement of Problem

- According to Song and Ward (2014) in the United States, 111,460 new patients with ESRD began dialysis in the year 2010. Of those 111,460 patients, over 50% were over the age of 65 years.
- In most developing countries, HD is the predominant modality for renal replacement therapy in the elderly ESRD population. Despite HD being the most popular modality for the older patient population, it remains unclear if HD or PD provides better outcomes.
- Comparisons of outcomes in elderly patients receiving HD and PD have mostly relied on observational studies (Segall et al., 2015). There have not been many randomized controlled trials on this subject. It is difficult and possibly unethical to assign patients to a dialysis modality because of the difference in burden associated with each modality (Bieber & Mehrotra, 2015).

Research Questions

- In older adults (age 65 years or greater) does hemodialysis or peritoneal dialysis provide the best outcomes judged by the quality of life, morbidity, and mortality?
- Is treating end-stage renal disease with renal replacement therapy in the older adult, is hemodialysis or peritoneal dialysis the modality of choice?



Literature Review

- Brown, Finkelstein, Iyasere, and Klinger (2016) showed that there is no one clear answer as to the best modality of dialysis for the frail elderly patient. Many factors may guide modality selection, and it should be a shared decision between the patient and the physician. Furthermore, the decision should be made based on the patient's goals of care, life expectancy, and ideal quality of life. Patient's co-morbid conditions must also play a role in modality selection to prevent exacerbation of certain comorbid conditions.
- Iyasere et al. (2016) showed that there is no difference in QoL and physical function between older patients undergoing assisted PD and HD. The study did demonstrate that there is higher satisfaction amongst patients undergoing assisted PD vs HD. The study further went on to conclude that older patients should be allowed to make the modality selection between assisted PD and HD based on their preferred choice.
- Kang, Do, Lee, and Kim (2017) showed that there was no significance in frailty between patients treated with PD vs HD. The mental component scale (MCS) and physical component scale (PCS) scored better in HD patients vs PD patients. Negative symptoms, problems, social interactions, sleep, and social support were favorable in HD patients. It was noted that patient satisfaction and positive dialysis staff encouragement were more favorable in PD patients.
- Rouveure, Bonnefoy, and Laville (2016) compared the survival outcomes of the patients receiving HD, PD, and CT. The results of the study showed that the survival of older patients over the age of 70 years does not depend on their dialysis modality selection.
- Segall et al. (2017) showed that dialysis modality choice should be a patient-centered decision made on an individual patient basis. The decision is best made after the patient has been well informed and can make a well-educated decision. Furthermore, it was found that a greater emphasis should be placed on the promotion of home therapies in elderly patients.

Discussion

- Often when older patients are started on dialysis, most nephrologists default to hemodialysis, but there is no great evidence to support this trend.
- Much research has shown a similar outcome with both peritoneal dialysis and hemodialysis in the older adult population.
- It is equally important to consider the quality of life and patient preference when selecting the dialysis modality for the older patient (Segall et al. 2017).
- Understanding each patients' goals of care while considering their life experiences and life expectancy may be a priority in the older patient population (Brown et al., 2016).
- Patients should be provided with unbiased information and allow the patient and their family to choose the dialysis modality that will best compliment the patients' needs and desires.
- It is important to also identify barriers that could lead to complications with a modality such as physical, visual, cognitive, psychological, and social problems. Furthermore, these barriers can be overcome with proper education, counseling, and assistance to allow the patient to be successful with their dialysis modality of choice Segall et al. (2017).

Applicability to Clinical Practice

- Primary care clinicians play an important role in educating and managing chronic medical conditions.
- The primary care clinician must understand the benefits and detriments of each dialysis modality as it pertains to the older ESRD patient. Knowing which modality might be best for their patient, and what struggles their patient may be experiencing is crucial.
- This review is intended to give the primary care clinician a better understanding of morbidity, mortality, and quality of life associated with older ESRD patients receiving hemodialysis and peritoneal dialysis.

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