

*Mini review***COVID-19 pandemic and hemodialysis: A review of the literature****Belgüzar Kara***

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Nowadays, the global burden of chronic kidney disease is increasing. Recent studies suggest that chronic kidney disease affects approximately 850 million persons worldwide. One in 10 adults suffers from chronic kidney disease [1]. It is remarkable that the increasing trend in the number of patients requiring renal replacement therapy. The number of these patients is expected to double by the year 2030 [2]. About 14.5 million people worldwide will be living with end-stage renal disease. It is also estimated that more than 2 million people will die annually from end-stage renal disease due to access-related problems to renal replacement therapies by 2030 [3].

Hemodialysis is the most common method used to treat end-stage renal disease [4] and is usually carried out in a facility (referred to as in-center hemodialysis). Conventional hemodialysis treatment is administered twice- or thrice-weekly regimens, and the sessions last 3 to 5 hours [4,5]. Home hemodialysis also enables physicians to individualize treatment plans based on the needs of patients with end-stage renal disease, allowing for social freedom, flexibility, and more privacy [6]. Previous studies report that home hemodialysis prolongs survival, reduces morbidity, and improves the quality of life of patients compared to in-center hemodialysis, yet it is underutilized worldwide [2,7,8], mainly, due to the organizational, physician, and patient factors [9]. In Europe, only 2% of dialysis patients are on home hemodialysis [2]. Some of the reasons for underutilization of home hemodialysis are the beliefs and expectations of patients, caregivers, and healthcare professionals toward home hemodialysis, suboptimal patient preparation, infrastructure-related problems, and reimbursement issues in healthcare settings [6,9]. Studies suggest that patients and their caregivers are worried due to lack of confidence in performing hemodialysis and self-cannulation, afraid of needles, quality of care, fear of a catastrophic event on home hemodialysis, housing constraints, loss of sense of normality, more family burden, and isolation from the support of their healthcare providers [6]. However, increasing the utilization of home hemodialysis is going to be critical very soon because of outbreaks such as the coronavirus disease 2019 (COVID-19) pandemic [10].

The COVID-19 was declared as a pandemic by the World Health Organization on March 11, 2020 [11]. According to data released by the World Health Organization, as of 1 July 2020, the COVID-19 has affected 10,321,689 people across 216 countries and territories and 507,435 people have died from the disease [12]. Many prevalent chronic conditions can be managed with telehealth and social distancing during the COVID-19 pandemic except for patients on in-center hemodialysis. These patients are unable to practice physical distancing rules while continuing treatment [10]. It is also emphasized that COVID-19 infected patients with end-stage renal disease are at higher risk of complication and death because of their older age and comorbidities than the general population [5,13]. According to Weiner and Watnick [10], “hemodialysis patients are a fragile population in a mandatory congregate setting” (p. 1). In other words, patients on hemodialysis are a highly susceptible population and hemodialysis centers are a high-risk area in terms of COVID-19 [13]. A cross-sectional study was conducted in one hemodialysis center in Wuhan between January 14 and February 17, 2020. During the study period, 37 patients (16.1%) and 4 staff (12.1%) had been diagnosed with COVID-19, and 6 patients with COVID-19 had died [14].

The hemodialysis centers face many challenges to be overcome during the pandemic. The problems can generally be categorized as follows: shortages of health professionals and technicians, difficulty cohorting COVID-19 infected patients when attending for hemodialysis, unavoidable exposure of health professionals to COVID-19 infected patients who need maintenance treatment, risks related to travel to and from hemodialysis facilities as well as risks related to supplies and equipment required for dialysis [10,15,16]. The COVID-19 pandemic related guidelines were recently developed for hemodialysis programs by the national and international societies of nephrology. Many recommendations for the prevention, mitigation, and containment of the emerging COVID-19 pandemic in hemodialysis centers were present in these guidelines [13,15].

On the other hand, home hemodialysis substantially reduces the risk of COVID-19 infection both in patients with end-stage kidney disease and in the health-care professionals, thus reducing the risk to the public [9]. Patients on home hemodialysis should continue care at their home, and monitored continuously using a remote monitoring system in healthcare. Regular home visits by healthcare professionals may also play an important role in health promotion and disease prevention during this time of crisis [5,13].

Consequently, in-center hemodialysis increases the risk of COVID-19 infection transmission to health-care professionals, patients, family members, and the public. The COVID-19 pandemic, therefore, presents specific challenges for patients on in-center hemodialysis and the healthcare team [13,15]. It is recommended to take initiative for building a successful home hemodialysis program [6,9].

Conflict of interest

The author declares that there are no conflicts of interest.

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