Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Rationing of Medical Supplies, Including Ventilators, for Patients With Kidney Disease

To The Editor: The COVID-19 pandemic has altered medical practice in all disciplines and subspecialties. In nephrology, such alterations involve the following issues: the availability of staff and resources to perform dialysis in patients with suspected or confirmed COVID; infection-prevention practices, especially in the realm of social isolation; delay in the placement of dialysis vascular accesses and peritoneal dialysis catheter; and continued access to care for patients with established chronic kidney disease (CKD) and immunosuppressed patients with renal transplants. To meet these challenges, prompt and judicious responses have occurred, including from the American Society of Nephrology (ASN) and the guidelines this society issued, by dialysis providers, and by the rapid incorporation of telenephrology in clinical practice. Such actions are works in progress that are—and will be—constantly being improved and refined and, indeed, have been successfully implemented at many places.[1]

A controversial issue that has gained considerable attention is the rationing of critical care services—especially mechanical ventilators—for patients with some medical conditions including CKD and end-stage renal disease (ESRD).[2,3] This needs to be carefully analyzed and resolved fairly, as it can introduce disparity in care based on categorical and seemingly arbitrary exclusions, rather than a reasoned and ethical strategy to prioritize care. Although it is essential to have an emergency-preparedness plan in the event of a shortage of ventilators, such a plan should not be based on excluding health conditions merely on the basis of their apparent poor long-term prognoses as has long been considered for conditions such as CKD and ESRD. The mortality of patients with ESRD and CKD continues to decline in the past decade, and the employment rates for these patients are improving.[4,5] A young patient with ESRD secondary to polycystic kidney disease and no other comorbidities has a much better long-term prognosis than a 73-year-old patient with diabetes, ESRD, and advanced heart failure; categorical exclusion on the basis of a blanket diagnosis of ESRD does not account for a stark difference in the long-term prognoses for these 2 patients. National organizations—such as the National Kidney Foundation—and many nephrology practices have requested considering a decision-making protocol based on the unique medical circumstances of each patient, rather than exclusion based on preexisting conditions such as kidney disease.[6,7]

Recent work from the University of Pittsburgh Medical Center lays a thoughtful and helpful framework in addressing the ethical and logistic challenges in such a health care crisis.[8,9] The goal of the allocation system in such situations needs to be 2-fold. The first is the greatest good for the greater number, meaning that resources are used in a way that benefits the majority, especially when resources are limited. The second is to ensure that all patients get meaningful access to care based on their current clinical conditions and are not denied care based on arbitrary criteria, such as disease diagnoses. This will only be possible if there is a rigorous system in place to triage patients, based on an individual clinical assessment and a scoring system that incorporates several factors. As recently delineated by White and Lo,[8] salient considerations in the decision-making process include, among others, the following: (1) short-term prognosis, based on a validated objective measure of probability of survival to discharge (such as the Sequential Organ Failure Assessment [SOFA] score); (2) long-term prognosis, to determine whether patients who have limited life expectancies despite surviving hospitalization and intensive care unit stay; (3) prioritizing groups vital to the public health response in the management of the acutely ill and in protecting lives; (4) prioritizing patients who are younger, to afford them an experience of life that is more extended rather than unexpectedly curtailed and, thus, with more meaning. It is crucial to reassess available resources at frequent intervals to ensure reallocation of the resources based on availability and the burden of disease. Finally, for patients who receive critical care services and ventilators, timely and repeated reassessments after a therapeutic trial duration will help make informed and prudent decisions about continuing the trial or using these resources for other sick patients.

In these unprecedented times, the medical community, providers, public health policy makers, ethicists, and the public are in unique positions to determine practices and guidelines pertaining to emergency preparedness and the provision of care with limited resources. In this regard, we believe that CKD/ESRD should not be blanket exclusionary conditions in the provision of critical care

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services, including ventilator support, for 2 principal reasons: For these conditions, mortality rates have decreased and the quality of life improved in recent years, and, with either condition, outcomes are vastly different depending upon individual patients, their comorbidities, and the specific cause of either CKD or ESRD.

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Comparison of Outcomes With Metformin and Sulfonylureas in Chronic Kidney Disease

To the Editor: The article by Whitlock et al[1] was a welcome addition to literature regarding treatment of patients with diabetes and stage 3-4 renal disease. As renal function diminishes, some patients with conditions previously controlled on oral agents must forgo them due to inefficacy, hypoglycemia, and metabolic complications and may ultimately require insulin. Patients with estimated glomerular filtration rates (eGFRs) less than 30 mL/min per 1.73 m^2 are often excluded from clinical trials. With respect to metformin therapy in the Manitoba study, only 247 patients had eGFR of less than 30 mL/min per 1.73 m^2. Of these, 90 were on metformin and represented 0.5% of the total study group. One hundred fifty-seven (7.8%) patients were on sulfonylureas. This observation adds to the evaluation of the international Ticagrelor in Patients With ST Elevation Myocardial Infarction Treated With Pharmacological Thrombolysis (TREAT) trial[2] from the same period that noted 75 patients with similar loss of kidney function who were prescribed metformin among 2515 (3%) of North American patients in the trial, although rates of metformin use were slightly higher in Eastern Europe/Russia (4.3%), Western Europe/Australia (6.5%), and Latin America (5.3%). The total of patients with eGFR less than 30 mL/min per 1.73 m^2 in the TREAT study was 153 of 4038. In the single-center, Joslin Diabetes Center records only 10 of 4625 (0.2%) patients with eGFR less than 30 mL/min per 1.73 m^2 were on metformin.[3] Clearly there is geographic variability in use of metformin (as well as sulfonylureas) among patients with stage 4 renal disease at greatest risk for hypoglycemia.

With respect to sulfonylureas, those used in the Manitoba analysis were chlorpropamide, tolbutamide, glyburide, glimepiride, and gliclazide, for which 50% to 90% of the active metabolites/drug are excreted in the urine. We were surprised that there was no mention of glipizide which is virtually all metabolized through the liver. The sulfonylurea drugs mentioned could be expected to have a higher complication rate than either glipizide or metformin. It would be helpful to use glipizide as the comparator. Unfortunately, none of the above studies have addressed this point. Given the relatively small numbers of patients with stage 4 renal disease who receive either metformin or sulfonylurea, additional information on glipizide would be of clinical importance. Until this is available, we would continue to exercise caution with the use of either sulfonylureas or metformin in patients with stage 4 chronic kidney disease.

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