ESKD Brief

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Chronic Kidney Disease (CKD) and End-Stage Kidney Disease (ESKD)

Overview

CKD currently affects about 37 million adults in the U.S. This remains a significant health concern as 9 out of 10 people with CKD are unaware of their condition. CKD can progress to ESKD, where kidney function is severely compromised, and dialysis or kidney transplant is required for survival. As of the latest data, there are around 816,000 individuals in the U.S. living with ESKD (USRDS, 2024), representing a significant increase from previous years. If preventive measures are not improved, the number of people with kidney failure is projected to exceed 1 million by 2030 (USRDS, 2024).

Key Statistics

- **Prevalence:** About 35.5 million people is the U.S have CKD, and as many as 9 out of 10 do not know it CDC,2024) Of those with ESKD 551,000 people receive dialysis, and 261,000 live with a kidney transplant (USRDS, 2024).
- **Mortality Rate:** One in five individuals on in-center hemodialysis die within the first year of treatment, with a 50% mortality rate within five years (USRDS, 2024).
- **Disparities:** African Americans, Hispanics, Asians, and Pacific Islanders are 2-4 times more likely to experience kidney failure compared to Whites.

Causes and Risk Factors

The two leading causes of CKD are diabetes and high blood pressure, affecting one in three and one in five adults, respectively (CDC, 2024). Social determinants of health (SDOH) also contribute significantly to the disparities seen in CKD prevalence. Addressing SDOH early on can improve outcomes. In children and teens, the causes of CKD range from cystic diseases and congenital conditions to glomerulonephritis in older teens.

Kidney Functions

Healthy kidneys:

- Remove waste products
- Balance fluids and electrolytes
- Release hormones that regulate blood pressure
- Produce active vitamin D for bone health
- Control red blood cell production

Challenges

CKD leads to several complications:

- Inability to remove toxins, requiring dialysis or transplant
- Electrolyte imbalance, including high potassium and phosphorus levels
- Fluid retention and swelling
- Hormone imbalances resulting in high blood pressure and anemia
- Decreased bone metabolism resulting in bone disease

ESKD Treatment Options

When kidneys fail, treatment includes hemodialysis, peritoneal dialysis, or kidney transplantation. Since 1972, Medicare has covered treatment costs for individuals with ESKD who are eligible for Social Security.

· **Hemodialysis:** Removes toxins and excess fluids by circulating blood through an artificial kidney. Treatment is typically scheduled three times weekly in dialysis centers or can be done at home with proper training.

· **Peritoneal Dialysis (PD):** Uses the peritoneal membrane in the abdomen for dialysis, which can be performed manually (continuous ambulatory PD or CAPD) or with a machine (continuous cycling PD or CCPD).

· **Transplantation:** While a kidney transplant can replace dialysis, it is not a cure. Recipients must take anti-rejection medications for life. Transplantation is further complicated by socioeconomic factors, which often impact eligibility and access to transplantation. Wait times and disparities in access persist, with 103,223 people currently waiting for a kidney transplant (HRSA, 2024).

Access to Care

Efforts to improve care delivery and access for underserved populations are crucial. The kidney community is concerned about the sustainability of the ESRD Medicare program given that the market basket fails to reflect the actual increase in costs incurred by dialysis facilities and the lack of adequate funding to support innovation. Without changes in these areas, individuals on dialysis, who are disproportionately young, male, African American, have disabilities, and low income will continue to experience significant inequities when compared to individuals with other chronic diseases.

Conclusion

CKD and its progression to ESKD present significant health challenges, particularly among vulnerable populations. Early detection, prevention, and equitable access to treatment are key to improving outcomes and quality of life for those affected.

References

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