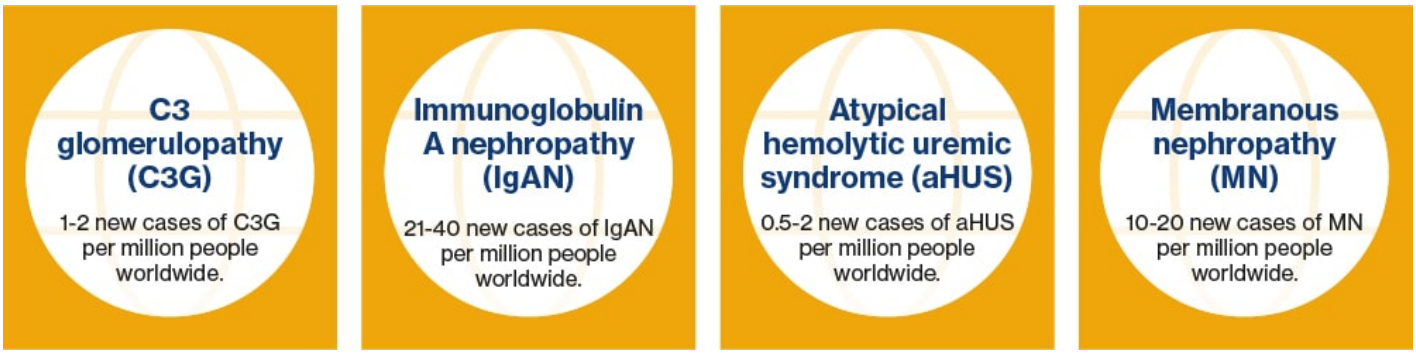
Complement-mediated kidney diseases and their impact

The kidneys play a vital role in keeping us healthy, and it is often only when something goes wrong that we realize just how important they are.[1] Unfortunately, as many as 1 in 10 people are affected by chronic kidney disease (CKD) worldwide, which occurs when the kidneys have been damaged over time and can no longer function the way they should.[2]

There are many different causes of CKD.[2] In some rare kidney diseases, called complement-mediated kidney diseases, damage to the kidneys is caused when a part of the immune system becomes overly active.[3-5] This generates an inflammatory response that leads to kidney damage, resulting in protein in the urine (proteinuria) and lower kidney function.[3,5]

Types of complement-mediated kidney diseases

Complement-mediated kidney diseases are chronic, rare, complex and progressive and occur when the immune system becomes overly active.[3-9] They include diseases such as C3 glomerulopathy (C3G), IgA nephropathy (IgAN), atypical hemolytic uremic syndrome (aHUS) and membranous nephropathy (MN).[7-10]



These rare kidney diseases, with the exception of MN, can start early in life, mainly affecting teens and young adults, though symptoms may not be noticed until later in life.[11-14] Unfortunately, some patients will progress to kidney failure within only 10 years of being diagnosed.[7,15-21]

Living with complement-mediated kidney diseases

People living with complement-mediated kidney diseases can experience a variety of symptoms, including debilitating fatigue, that have a significant impact on their quality of life.[22-25] This can limit physical activities and abilities to socialize, resulting in severe psychosocial consequences, including reduced motivation, depression and anxiety.[23-25]

Unfortunately, there are limited treatment options specifically approved for these rare kidney diseases.[7,10,15,25-27] Oral corticosteroids and immunosuppressants can be used in patients at high risk of disease progression, but these often come with significant side effects, including hypertension, diabetes, obesity and a heightened risk of infections.[25-28]

Progression of these diseases to kidney failure can also mean that people require dialysis for life or may need a kidney transplant, which contributes to an impaired quality of life and an increased risk of premature death.[29-30]

The symptoms associated with complement-mediated kidney diseases, along with the challenges of therapy and time-consuming dialysis, can lead to impaired quality of life and feelings of social isolation and increasingly poor health.[22-25]

The human and societal impact of complement-mediated kidney diseases

In addition to the personal impact of complement-mediated kidney diseases, many people can experience unemployment and productivity loss, given the high prevalence of these diseases among working-aged adults.[31-33] In the U.S., only 11-31% of people who were previously employed retained their job a year after starting on dialysis, compared with 30% in Europe, and 55% in Japan.[34]

There is also a significant impact on healthcare systems, with high-income countries typically spending more than 2-3% of their annual healthcare budget on the treatment of kidney failure.[35,37] In the U.S., for example, the treatment of chronic kidney disease cost more than $87.2 billion in 2019.[36]

Without new treatment options, there will continue to be a significant economic burden on healthcare systems across the globe, driven by dialysis and kidney transplantation costs.[36-38]

Our commitment to complement-mediated kidney diseases

At Novartis, we are committed to developing treatments for people living with complement-mediated kidney diseases through continued investment in research and development, and targeted acquisitions.

There is a need for well-tolerated therapies that target key drivers of disease progression in complement-mediated kidney diseases to help delay kidney failure, and in doing so, extend dialysis-free life.[39]

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