Transcript Details

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Measuring IgAN Risk: Genetic, Environmental, and Systemic Factors

Announcer:
You're listening to *Clinician's Roundtable* on ReachMD. On this episode, Dr. Mohamed Ibrahim will discuss general risk factors for IgA nephropathy, or IgAN. Dr. Mo is an Assistant Professor of Transplant Nephrology at the University of Maryland School of Medicine as well as a YouTube content creator focusing on kidney health. Let's hear from Dr. Mo now.

Dr. Ibrahim:
What are the common risk factors for IgA? I'm also going to talk about the specific population and how that relates to each other. Let me start by the risk factors for IgA nephropathy. IgA nephropathy can develop due to a combination of genetic, environmental and immune systemic factors. There are common risk factors in populations that are more likely to develop it. For example, let's talk about genetic predisposition. Having a family history of IgA nephropathy increases the risk of IgA nephropathy, suggesting that there is a hereditary component to this process. There are also some specific genetic variants linked to immune system and IgA regulation that are associated with higher susceptibility. There are some certain ethnicities as well that are more common to develop it. For example, it's more common in people of Asian and Caucasian descent, and it's less common in African American populations. Also, the age and gender can play a role. For example, it primarily affects young adults, typically appearing in the late teens up to the early 30s. Men are usually more affected than women, particularly in Western countries.

There are also some other triggers. For example, infections, upper respiratory or gastrointestinal infections often precedes episodes of blood in the urine as these infections can stimulate the production of an abnormal IgA. There also is some immune abnormality dysfunction in the production or clearance of the IgA antibodies that can lead to the formation of immune complexes that deposit in the kidneys. There are also some rare but contributing factors, such as a disease called celiac disease. Some studies suggest there is a link between IgA nephropathy and gluten sensitivity. Some liver diseases, conditions like cirrhosis, are associated with higher risk of IgA nephropathy. And also, some very common environmental triggers—for example smoking, dietary factors and infections—may also play a role in that process.

So it's true that we know that IgA nephropathy is more common in certain regions of the world, but why is this the case, and why or how do the geographical and racial differences impact the diagnosis? So the prevalence and outcomes of IgA nephropathy vary significantly across different regions and racial groups. This disparity can be attributed to a combination of genetic, environmental, and healthcare system factors.

Let's start by the geographic prevalence. We know that IgA nephropathy has high prevalence and most commonly diagnosed in East Asia, particularly in Japan, China and Korea. The incidence in these countries is partially due to routine health screenings, which frequently includes urine analysis, and this allows for early detection of the disease. There are some locations that have intermediate prevalence. For example, Europe and North America here show moderate levels of IgA nephropathy. Why is this less frequent than Asia? There is also awareness, and access to healthcare can influence the diagnosis rate. There are geographic areas that have low prevalence. This condition is very rare in Sub-Saharan Africa, some parts of the Middle East, which could reflect either it's true low prevalence in the disease, or it's just underdiagnosed there due to limitation in healthcare resources.

There are some genetic factors. For example, certain populations, particularly East Asian and Caucasian, they have higher genetic susceptibility to IgA nephropathy. Specific genetic variants linked to IgA metabolism and immune regulation are more prevalent in these groups. Conversely, African population appear to have protective genetic factors that lower the risk.

Some environmental and lifestyle factors as well can affect the geographic distribution. For example, diet. Dietary habits such as high

salt intake or specific protein sources may influence IgA production and the disease progression. And as I mentioned before, infections, frequent respiratory or gastrointestinal infections in certain areas, in certain climates, may trigger the onset of the IgA nephropathy in these individuals.

The last point is the impact on diagnosis and treatment. There are differences in access to kidney biopsies, which is the diagnostic tests of IgA nephropathy.. Some countries may underreport due to fewer biopsy procedures, and some countries are more aggressive with biopsies and we can detect the disease early. The treatment approaches can differ geographically as well. For example, in East Asia, early intervention with rigorous blood pressure control and immune suppression is very common, whereas in Western countries, treatment may focus more on long-term outcomes and patient-specific risk factors. In low resources settings, like in Africa, lack of access to advanced treatment may limit the option. That's why there is this geographic disparity in the diagnosis of the disease.

Announcer:
That was Dr. Mohamed Ibrahim talking about general risk factors for IgAN. To access this and other episodes in our series, visit *Clinician's Roundtable* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening!