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## The Evolving Role of Biomarkers in IgAN

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### Dr. Cheung:

This is CE with GLC, and I'm Dr. Chee Kay Cheung. Today we're going to review the evolving role of biomarkers in IgA nephropathy, and how our advances in understanding the underlying disease pathology are beginning to influence how we consider biomarkers in the management of IgA nephropathy.

We know that IgA nephropathy is a complex and highly variable disease in that some patients can have a stable, benign course, whereas others can have a progressive course leading to kidney failure, and in occasions some patients may have a very rapid disease course as well.

Traditionally, we've used markers such as proteinuria, blood pressure, eGFR in order to determine risk prediction in our patients, but we know that many of these markers may only change when disease has already been established. So we need better biomarkers in order to detect who is going to be at risk of disease progression earlier on, before that disease has already become established, and importantly to work out how to individualize our treatment choices and be able to select the best treatment for the right patient at the right time, and this is where biomarkers could really add value. The aim is to move towards a more personalized approach in our management of IgA nephropathy.

Some of the areas of interest are in the IgA response in IgA nephropathy. We know that the mucosal IgA system is activated in patients with IgA nephropathy and may become dysregulated.

There are lots of studies looking at the IgA structure, for example, increases in levels of the pathogenic forms of IgA, galactose-deficient IgA1, levels of immune complexes, and what those immune complexes may contain.

But we know that these markers are not sufficient at the moment in order to really determine who is at risk of progression, because some patients could have high levels of Gd-IgA but not progress, so there's a great overlap, and much more research is taking place in order to really try to define these thresholds better.

Another area of interest is in complement biomarkers. We know the complement system can be overactive in patients with IgA nephropathy, and particularly of the alternative and the lectin pathways, and some of these biomarkers are associated with increased risk of disease progression. And complement biomarkers may be an exciting field because they could determine what type of treatment may be needed in certain patients.

Another biomarker which is emerging is urinary soluble CD163. So urinary soluble CD163 is a marker of activated macrophages and is shed when macrophages are activated within the kidneys. There's a lot of interest in this biomarker from the fields of vasculitis and lupus nephritis. And we've now seen some studies in IgA nephropathy that show that urinary soluble CD163 levels are correlated with worse histological activity and an increased risk of disease progression as well.

We've now seen studies as well that show that treatment that reduces urinary soluble CD163 is associated with better outcomes, and this was a study looking at corticosteroids in IgA nephropathy.

So my take-home message is that there's lots of work being done in biomarkers in IgA nephropathy. The KDIGO guidelines currently state that none of these biomarkers are currently validated for treatment choice, but hopefully with all the research that's happening and many more studies and the clinical trials that are happening, we may be able to identify biomarkers that can help us guide treatment decisions in the near future.

So thank you very much for listening.

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