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GLOMERULAR DISEASE

Exacerbation of IgAN by gluten

Gliadin—a constituent of the wheat protein gluten—could have a deleterious role in the initiation and aggravation of IgA nephropathy (IgAN) by promoting shedding of the soluble IgA receptor sCD89 and inducing IgA–immune complex formation, say the authors of a new study. "We show that CD89 interacts with gliadin to participate in the formation of nephrotoxic IgA complexes," explain Laureline Berthelot and Renato Monteiro. "These results confirm the importance of the intestinal compartment and nutrition in IgAN pathophysiology and open a new field of research."

Previous work suggesting that coeliac disease and IgAN share common pathological pathways led Monteiro and colleagues to investigate the pathologic role of gluten in experimental IgAN, by studying the effects of dietary gluten in a humanized mouse model of IgAN. The induction of gluten sensitivity in these mice by subjecting them to a gluten-free diet for at least three generations resulted in the disappearance of IgA deposits and improvements in kidney function. Reintroduction of gluten resulted in the reappearance of IgA1–sCD89 complexes and exacerbated intestinal responses inducing a coeliac-like disease with symptoms of IgAN. Levels of IgA1 anti-gliadin antibodies correlated with proteinuria in mice and in a cohort of 26 patients with IgAN. Long-term delivery of a gluten-free diet was more effective than shorter-term diets in preventing disease progression in mice. "Our experiments indicate that early treatment with a gluten-free diet could be beneficial to avoid development of renal failure in patients with IgAN," say the researchers.

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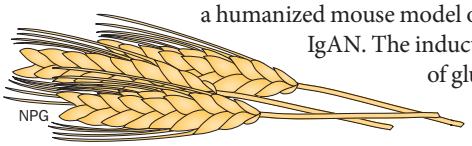

Original article Papista, C. *et al*. Gluten exacerbates IgA nephropathy in humanized mice through gliadin-CD89 interaction. *Kidney Int.* doi:10.1038/ki.2015.94