Gluten and Celiac Disease

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Celiac disease (CD) is an autoimmune disorder which affects the small intestine. Based on serological studies, CD's incidence rate is about 1%.[1] Syam et al[2] reported that incidence rate of CD was 2.83% in 283 high-risk adult Indonesians. This study used IgA antitissue transglutaminase (anti-TTG) and IgG anti-deaminated gliadin peptide (anti-DGP) as serologic markers. Some factors associated with CD are age, history of other autoimmune disease, and constipation

Individuals with a genetic susceptibility may suffer from CD induced by gluten consumption. Gliadin, one of the gluten fractions, will induce inflammation in the mucosa of small intestine. The effective management of CD is gluten-free diet. However, in fact, gluten is widely used in everyday food ingredients. Even a small exposure to gluten is associated with changes in the mucosa of small intestine. Monitoring of gluten consumption is substantial in managing CD patients.

Mucosal biopsy is the gold standard in monitoring dietary compliance of CD patients. Due to its cost and the invasiveness of this procedure, another method is needed. Serological testing has an essential role in CD screening, but it does not represent both the mucosal damage or symptoms in CD patients.

An alternative way to monitoring gluten intake is the gluten immunogenic peptide (GIP) detection, a biomarker of gluten intake. Previous studies reported that there was a correlation between urinary GIP and severity of small intestine mucosal damage.[3,4,5] A systematic review by Prasetya et al in reported that urinary GIP has the potential to be a useful indicator in assessing the severity of mucosal damage. Additionally, urine samples are easy to collect, transport, and store.

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