3rd World Summit on

Neonatology, Pediatrics and Developmental Medicine

September 26, 2022 | Webinar

Possible link between stunting and pediatric environmental enteropathy in resource limited settings

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Stunting remains one of the most pressing global health problems with roughly one out of four children less than 5 years of age affected. Stunting is defined as a height-for-age z-score [less than or equal to] 2 SD of the median height of the WHO reference population. Rehabilitation programs have been less effective due to the persistent vicious cycle between under nutrition and infection. While the prevalence of stunting has slightly decreased globally in the past two decades, it has only marginally decreased in Sub-Saharan Africa, and the actual number of affected children has increased. Stunting is a syndrome with severe longterm consequences including increased risk of illness and mortality and delayed psychomotor development. The treatment of stunted children is challenging to date as the underlying etiology and pathophysiological mechanisms remain unclear. The current potential causes of stunting range from inadequate food to poor hygiene and repeated infections. Stunting is a complex entity that may reflect several etiologies, particularly a poor, unbalanced diet and insufficient vitamin/micronutrient intake. It also involves social factors, including family's resources and configuration, as well as the broader political and economic conditions in which children live. In recent years, accumulating evidence has shown that a chronic, inflammatory syndrome of the small intestine, called Pediatric Environmental Enteropathy (PEE), may play a major role in this syndrome. PEE is a subclinical condition generally caused by constant fecaloral contamination, a common scenario in resource limited setting, resulting in increased permeability of the small intestine and influx of immune cells into the gut epithelium. It is now hypothesized that PEE may play an important role in the pathophysiology of stunting. The main objective of this paper is to describe the intestinal dysbiosis observed in the context of stunting and to link it to PEE. Secondary objectives include the identification of the broader socio-economic environment and biological and environmental risk factors for stunting and PEE. We also discuss host outcomes such as mucosal and systemic immunity and psychomotor development and possible interventions in resource limited settings.

Keywords: Stunting, Pediatric environmental enteropathy, Resource limited settings, Under-five children.

Biography

Dr. Beatrice Nyanchama Kiage Mokua has completed her PhD at the age of 37 years from Christian Albrecht's University (CAU), Kiel, German. She is a lecturer at Jomokenyatta University of Agriculture and Technology at the Department of Food science and Technology. She has papers in reputed journals.

Received: July 15, 2022; **Accepted**: July 17, 2022; **Published**: October 14, 2022