

S25-3 Intestinal microbiota and intractable atopic dermatitis

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In atopic dermatitis (AD) patients, the intestinal mucosal barrier function is weakened and Th1/Th2 balance is leaned to Th2 by the intestinal bacterial stimulation. Polyamines (PA) are closely associated with the maturation and maintenance of the intestinal mucosal barrier function and systemic immune system. We hypothesized that decrease in intestinal PA concentration due to an intestinal microbiota disorder induces the increase of intestinal permeability and the imbalance of Th1/Th2 of adult-type AD patients. Intestinal microbiota and PA concentration obtained from intractable adult-type AD patients and healthy adults were compared using terminal-restriction fragment length polymorphism. The intestinal microbiota of volunteers were divided into two clusters, Healthy adult cluster and AD patient cluster. Intestinal PA concentration in AD patient cluster was lower than that in Healthy adult cluster. In a double-blind, placebo-controlled, crossover study, probiotic LKM512 yogurt (LKM512-Y) was given to adult AD patients who had not been treated with steroid medicine and undergoing long-term treatment with Kampo medicine. Intestinal microbiota was altered dynamically by LKM512-Y, in particular, the bacterial species of *Bifidobacterium*, *Clostridium* cluster IV and XIVa were increased in number. Intestinal PA and butyrate concentration was increased by LKM512-Y consumption. LKM512-Y and placebo consumption increased the serum IFN- γ concentration by six- and threefold, respectively. These findings indicate that the control of intestinal microbiota due to LKM512 is effective against intractable adult-type AD.