

【Symposium 2-2】

Risk of Food Safety and Kidney Health: Case Analysis of the Polam Kopitiam Incident and Red Yeast Contamination in Japan

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Food safety is crucial for public health, especially in relation to chronic kidney disease (CKD), a growing global issue. Recent incidents in Taiwan and Japan have highlighted the serious implications of food safety failures on kidney health.

The first case involves the Baolin Teahouse poisoning in Taiwan, where consumers ingested food contaminated with bongkrekic acid (BKA). This toxin, produced by the bacterium *Burkholderia gladioli* pathovar *cocovenenans*, caused severe gastrointestinal symptoms such as nausea, vomiting, and diarrhea, which led to liver failure and kidney damage. BKA disrupts the function of adenine nucleotide translocase (ANT) in mitochondria, inhibiting ATP production and causing cell death. This process can result in acute kidney injury (AKI), which may progress to CKD. This incident underscores the dangers of microbial contamination in food and the importance of rigorous food safety practices.

Another case involves the contamination of red yeast rice products by Japan's Kobayashi Pharmaceutical. These products were found to contain puberulic acid, a toxic compound produced by *Penicillium* species. Consumption of these contaminated products resulted in kidney dysfunction and cases of Fanconi syndrome, a condition that impairs the kidney's ability to reabsorb essential substances. Despite being marketed as health supplements, these products posed serious risks to kidney health due to microbial contamination.

These cases highlight the necessity of strict food safety regulations to prevent chemical and biological contamination that could lead to CKD. By enhancing monitoring systems and raising public awareness about food safety, we can better protect public health and prevent such incidents from occurring.

