Oral session

Introduction of clinical sequence using a comprehensive cancer gene panel (OncoPrime) to daily clinical practice

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Background: Advances of next-generation sequencing technology has enabled us to survey multiple cancer-related genes at a time. It is a promising approach to incorporate this technology into daily clinical practice to establish the genome based personalized medicine. In United States, such a comprehensive cancer gene panel has already been introduced in daily clinical practice and its use is steadily growing in recent years; however, there has been no established system to apply a comprehensive cancer gene panel to daily clinical practice in Japan.

Methods: We are planning to introduce a comprehensive cancer gene panel (OncoPrimeTM, Mitsui Knowledge Industry Co. Ltd., Japan) to daily clinical practice in February 2015. OncoPrimeTM requires 100 ng of Tumor DNA (obtained from 10 formalin-fixed paraffin-embedded slides) and can cover all the exons in 223 cancer-related genes and identify point mutations (over 21,000 COSMIC mutations). It can also identify insertions, deletions and rearrangements of 17 cancer-related genes.

Results: We will apply OncoPrime to those patients who have failed standard chemotherapy or patients with primary unknown cancer or rare cancer. In addition, we will integrate both clinical and sequencing data and establish a database that helps us promote the genome based personalized medicine in Japan.