Oral Session

O1–002 SERUM HER2 EXTRACELLULAR DOMAIN LEVELS AND TISSUE HER2 OVEREXPRESSION IN ADVANCED GASTRIC CANCER PATIENTS

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Background: Overexpression of human epidermal growth factor receptor 2 (HER2) is now a crucial biomarker when applying the first line combination chemotherapy containing trastuzumab. Reportedly, tissue HER2 status in gastric cancer shows intra-tumor heterogeneities as well as differences in results between facilities. In addition, though usefulness of monitoring serum HER2 extracellular domain (HER2ECD) level in metastatic breast cancer has previously reported, little is known about that of gastric cancers in our hospital. Secondly, we aimed to study the relationship between serum HER2ECD levels and tissue HER2 overexpression in a subset of this cohort.

Methods: 1) HER2 status of gastric cancer tissues from 85 patients were analyzed by immunohistochemistry (IHC) and fluorescence in situ hybridization (FISH) assays in our institution. In 27 patients (Subset A) enrolled in a multi-institutional observational study, tissue HER2 status was independently examined in the other laboratory. In 54 patients (Subset B), serum HER2ECD levels were measured by chemiluminescent immunoassay.

Results: Tissue expression of HER2 was positive (IHC3+ or IHC2+ plus FISH+) in 15.0% (13/85) in total, 25.9% (7/27) in subset B, and 24.0 % (13/54) in subset C. One difference in results between laboratories was observed. In subset C, the mean serum HER2ECD level was 19.1 ± 25.1 ng/ml (11.3 ± 3.9 ng/ml for tissue HER2 negative, 44.3 ± 43.4 ng/ml for positive pts.). With a cutoff level of 15 ng/ml, the sensitivity of serum HER2ECD levels with respects to HER2 positivity was 77%, specificity 80%, positive predictive value 55.5%, negative predictive value 91.2%.

Conclusion: 1) Percentage of HER2 positive metastatic gastric cancer in our institution is almost the same with previous reports, exhibiting some intra-tumor heterogeneities. 2) Although in the small and rather biased population, serum HER2ECD level shows considerable correlation with HER2 overexpression in advanced gastric cancers, warranting a further study about usefulness HER2ECD monitoring during treatment with trastuzumab.