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Oral

## [O27-3] O27-3: Oncology (1)

Chairs: Alan Fotoohi, Sweden / Masami Kawahara, Japan

Wed. Sep 27, 2017 1:30 PM - 2:30 PM Room C1 (1F)

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(Wed. Sep 27, 2017 1:30 PM - 2:30 PM Room C1 )

## [O27-3-4] Effect of proton pump inhibitors co-administration on the plasma concentration of erlotinib in patients with non-small cell lung cancer (2nd report)

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Keywords: erlotinib, proton pump inhibitor, H2-blocker, drug interaction,

### Background

Erlotinib is a tyrosine kinase inhibitor targeting epidermal growth factor receptor used for treatment of advanced or metastatic non-small cell lung cancer. Since gastrointestinal absorption of erlotinib is affected by gastric pH, of which higher pH provides lower dissolution of erlotinib, resulting in the poor absorption, concomitant use of anti-acids may associate with lower blood concentration of erlotinib. We investigated the effects of anti-acids (H2-blockers and proton pump inhibitors: PPIs) co-administration on the plasma erlotinib concentration in patients with non-small cell lung cancer.

### Methods

Forty patients (male/female: 15/25, 65.8±6.5 yrs) who were treated with 1.61±0.77 mg/kg/day erlotinib for non-small cell lung cancer, were recruited in Ibaraki Prefectural Central Hospital and University of Tsukuba Hospital. Patients were classified into three groups: without co-administration of anti-acids (control group: n=22), with co-administration of PPIs (PPIs group: n=12) and co-administration of H2-blockers (H2-blockers group: n=6). Steady state trough plasma concentrations of erlotinib were measured by high-performance liquid chromatography previously described. The study was approved in ethical committee of each hospital.

### Results

The median (range) plasma concentration of erlotinib was 0.789 (0.074-2.599) g/mL. The dose adjusted plasma concentration of erlotinib (C/D ratio) were significantly lower in PPIs group (0.454: 0.079-0.756) compared with the control group (0.545: 0.256-1.405) ( $P=0.045$ ). Lower C/D ratio was observed in patients with H2-blockers (0.480: 0.268-0.802), though the difference was not statistically significant compared with the control group.

### Conclusions

Co-administration of PPIs decreases gastrointestinal absorption of erlotinib, resulting in a significant reduction in the plasma erlotinib concentration. This drug interaction for erlotinib, however, may not be remarkable in the case of weak anti-acids such as H2-blockers.