

**【Results】** Seventy-seven cases were male/female : 62 (80.5%) cases/15 (19.4%), median age 54 (27-85), and symptoms were present in only 8 (10%). The location was 61 polyps (76.3%) in the left colon (27 in the sigmoid colon, 27 in the rectum, and 7 in the descending colon) and 19 polyps (23.7%) in the right colon (13 in the transverse colon, 5 in the ascending colon, and 1 in the cecum). The median diameter of the polyp was 7 mm (range, 3-25 mm), and the macroscopic appearance was subpedunculated in 39 polyps (48.8%), pedunculated in 27 polyps (33.7%), and sessile in 14 polyps (17.5%). Redness was observed in 74 polyps (92.5%), erosion in 54 polyps (67.5%), and white coat in 34 polyps (42.5%), which corresponded to previously report endoscopic findings in juvenile polyps. Group A had 22 polyps (88.0%) in the left colon (14 in the rectum, 6 in the sigmoid colon, 2 in the descending colon) and 3 polyps (12.0%) in the right colon (2 in the transverse colon, 1 in the ascending colon), with a median polyp diameter of 8 mm (4-25 mm), macroscopic appearance was subpedunculated in 13 polyps (52.0%), pedunculated in 9 polyps (36.0%), and sessile in 3 polyps (12.0%). Redness was observed in 24 polyps (96.0%), erosion in 21 polyps (84.0%), and white coat in 16 polyps (64.0%). On the other hand, group B had 39 polyps (70.9%) in the left colon (21 in the sigmoid colon, 13 in the rectum, 5 in the descending colon) and 16 polyps (29.1%) in the right colon (11 in the transverse colon, 4 in the ascending colon, 1 in the cecum), with a median polyp diameter of 9 mm (3-25 mm), macroscopic appearance of 26 subpedunculated (47.3%), 18 pedunculated (32.7%), and 11 sessile (20.0%).

Redness was observed in 50 polyps (90.9%), erosion in 33 polyps (60.0%), and white moss in 18 polyps (32.7%). There were no significant differences between the two groups in the location, diameter, macroscopic appearance, and presence or absence of redness of polyps. But polyps without erosion or white coat were misdiagnosed with a significant difference ( $p<0.05$ ). The most common false diagnoses were adenomas (37 polyps, 67.3%), polyps (9 polyps, 16.3%), inflammatory polyps (6 polyps, 10.9%), and early colorectal cancer (3 polyps, 5.5%).

**【Conclusion】** In our study juvenile polyps without erosion or white coat were more likely to be misdiagnosed as adenomas. Thus when the endoscopist encounter a lesion, which is difficult to diagnose, it is important keeping juvenile polyp in mind, especially when there is duct dilation, which suggest strongly of juvenile polyp.

## P2-26

### Clinical significance of urinary titin in cancers of the digestive system

(社会人大学院博士課程 1年消化器外科学)

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**【Purpose】** Regarding cancers of the digestive system, depending on the condition thereof, sarcopenia can often be seen prior to surgery. Having sarcopenia prior to surgery is known to greatly affect life prognosis. Sarcopenia is evaluated by skeletal muscle mass and biochemical examinations, etc., with the development of a new biomarker that reflects the condition of muscle catabolism expected. Titin, which is a giant elastic muscle protein existing in skeletal muscle or sarcomeres, which are cardiac muscle cells, is known to exhibit a high value among patients with myocardial infarction or muscular dystrophy. In this study, we measured urinary titin to analyze the relation with the blood test indexes of sarcopenia and examined if it is effective in evaluating sarcopenia.

**【Method】** The subjects were 51 patients with cancers of the digestive system hospitalized in the main hospital, including 31 males and 20 females, with a mean age of 72 (35-85). The breakdown of the diseases was 20 patients with gastrointestinal cancer and 31 patients with hepatic, biliary and pancreatic diseases. We made a comparison between the items of blood biochemistry testing and urinary titin.

**【Result】** Titin exhibited negative correlations with albumin ( $r=-0.096$ ,  $p=0.001$ ), prealbumin ( $r=-0.644$ ,

$p=0.022$ ), cholinesterase ( $r=-8.918, p=0.012$ ), and BMI ( $r=-0.377, p=0.007$ ). When comparing two groups with gastrointestinal cancer and hepatobiliary pancreatic cancer, the value of urinary titin was significantly high in the group with gastrointestinal cancer (6.1 (1.9-20.0) vs 5.2 (2.3-12.4) pmol/mg Cr :  $p=0.0001$ ).

**【Discussion】** From this examination, it is suggested that measuring urinary titin may become a nutritional indicator prior to surgery for patients with cancers of the digestive system, as it exhibited negative correlations with albumin, prealbumin, and BMI. Going forward, we are planning to increase the number of cases and add examinations of muscle mass and muscle strength.

## P2-27

### Comparison of autophagy inducing effect in various tyrosine kinase inhibitors in cancer cells by quantitative autophagy flux monitoring system

(社会人大学院博士課程3年耳鼻咽喉科・頭頸部外科学)

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We reported that tyrosine kinase inhibitors (TKIs) including gefitinib (GEF) and imatinib (IMA) induce autophagy in many types of cancer cells. We also reported that GEF induces autophagy in EGFR knock-out A549 cells. This indicated GEF induced-autophagy is independent of EGFR inhibition. Therefore, other target(s) might be involved in TKI-induced autophagy. We here compared autophagy inducing ability of various TKIs by establishment of the quantitative autophagy flux assay system.

We transfected GFP-LC3-mCherry-LC3  $\Delta$  G plasmid (a kind gift from Prof. Mizushima and modified) to A549, PC-9 and CAL27 cell lines and generated stable expression clones. Monitoring the fluorescent ratios of GFP/mCherry by IncuCyte Cell Imaging System enabled us to evaluate the autophagy flux condition during

exposure to TKIs: GEF, osimertinib (OSI) and lapatinib (LAP) for EGFR-TKI, lenvatinib (LEN) and sorafenib (SOR) for VEGFR-TKI, IMA and dasatinib (DAS) for ABL- and KIT-TKI, and tivantinib (TIV) for HGFR-TKI.

Among eight TKIs, DAS, GEF and SOR exhibited the prominent autophagy inducing effect in A549 and PC-9 cells. In CAL27 cells, IMA, SOR and LEN exhibited autophagy induction, but less strong, probably because of upregulation of endogenous autophagy. We also reported that macrolide antibiotics including AZM have an effect of blocking autophagy. Combined treatment of either DAS, GEF or SOR with AZM all resulted in pronounced cytotoxicity in A549 cells. Thus, autophagy induction by TKIs appears to function as cytoprotective. Blocking autophagy appears to enhance the therapeutic effect of TKIs in various cancers.

## P2-28

### Comparison of amino acid profile between non-tumor and tumor regions in the patients with lung cancer

(社会人大学院博士課程4年呼吸器・甲状腺外科学)

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**【Background】** Recently, the comprehensive amino acid (AA) profiling in blood has been put to practical use for cancer screening, because cancer cells have the specific energy metabolism using AAs. Because the AA metabolism has been uncleared in cancer parts of the patients, this study purposed to compare the AA profile between the non-tumor and tumor regions within the same patients suffered from lung cancer.

**【Methods】** Non-tumor and tumor regions in lung tissue were harvested from the 14 patients with small cell cancer who underwent lung resection under obtaining informed consent. The AAs profiling in both the