388P

# Early tumor shrinkage and depth of response analyses in metastatic colorectal cancer treated with first-line mFOLFOX6 plus panitumumab or bevacizumab: Results from the phase 3 PARADIGM trial

Kei Muro,[1] Jun Watanabe,[2] Kohei Shitara,[3] Kentaro Yamazaki,[4] Hisatsugu Ohori,[5] Manabu Shiozawa,[6] Hirofumi Yasui,[4] Eiji Oki,[7] Takeo Sato,[8] Takeshi Naitoh,[9] Yoshito Komatsu,[10] Takeshi Kato,[11] Masamitsu Hihara,[12] Junpei Soeda,[12] Kouji Yamamoto,[13] Kiwamu Akagi,[14] Atsushi Ochiai,[15] Hiroyuki Uetake,[16] Katsuya Tsuchihara,[17] Takayuki Yoshino[18]

[1]Department of Clinical Oncology, Aichi Cancer Center Hospital, Nagoya, Japan; [2]Gastroenterological Center, Yokohama City University Medical Center, Yokohama, Japan; [3]Department of Gastroenterology and Gastrointestinal Oncology, National Cancer Center Hospital East, Chiba, Japan; [4]Division of Gastrointestinal Oncology, Shizuoka Cancer Center, Shizuoka, Japan; [5]Division of Medical Oncology, Japanese Red Cross Ishinomaki Hospital, Miyagi, Japan; [6]Division of Gastrointestinal Surgery, Kanagawa Cancer Center, Kanagawa, Japan; [7]Department of Surgery and Science, Graduate School of Medical Sciences, Kyushu University, Fukuoka, Japan; [8]Research and Development Center for Medical Education, Department of Clinical Skills Education, Kitasato University School of Medicine, Sagamihara, Japan; [9]Department of Lower Gastrointestinal Surgery, Kitasato University School of Medicine, Sagamihara, Japan; [10]Division of Cancer Chemotherapy, Hokkaido University Hospital Cancer Center, Sapporo, Japan; [11]Department of Surgery, National Hospital Organization Osaka National Hospital, Osaka, Japan; [12]Japan Medical Affairs, Japan Oncology Business Unit, Takeda Pharmaceutical Company Ltd., Tokyo, Japan; [13]Department of Biostatistics, Yokohama City University School of Medicine, Yokohama, Japan; [14]Division of Molecular Diagnosis and Cancer Prevention, Saitama Cancer Center, Saitama, Japan; [15]Pathology Division, Exploratory Oncology Research & Clinical Trial Center, National Cancer Center, Chiba, Japan; [16]National Hospital Organization, Disaster Medical Center, Tokyo, Japan; [17]Division of Translational Informatics, Exploratory Oncology Research & Clinical Trial Center, National Cancer Center, Chiba, Japan; [18]Department of Gastroenterology and Gastrointestinal Oncology, National Cancer Center Hospital East, Kashiwa, Japan

## Introduction

- The primary analysis of the PARADIGM trial (NCT02394795) demonstrated that panitumumab plus modified FOLFOX6 (mFOLFOX6) significantly improved overall survival (OS) compared with bevacizumab plus mFOLFOX6 in patients with *RAS* wild-type (WT) and left-sided metastatic colorectal cancer (mCRC) **(Table 1)**[1]

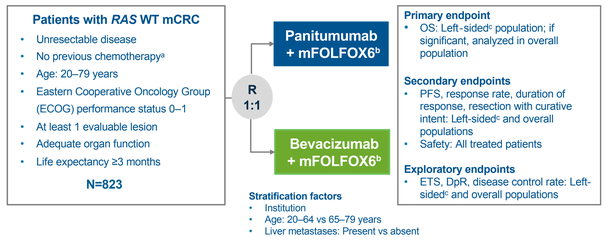
**Table 1: Primary efficacy outcomes from the phase 3 PARADIGM trial**

| Parameter | Panitumumab + mFOLFOX6 | Bevacizumab + mFOLFOX6 | HR (95% CI) |
|---|---|---|---|
| **Left-sided mCRC** | n=312 | n=292 | |
| Median OS, mo (95% CI) | 37.9 (34.1–42.6) | 34.3 (30.9–40.3) | 0.82 (0.68–0.99); *P*=0.031 |
| Median PFS, mo (95% CI) | 13.7 (12.7–15.3) | 13.2 (11.4–14.5) | 0.98 (0.82–1.17) |
| Response rate, % (95% CI) | 80.2 (75.3–84.5) | 68.6 (62.9–74.0) | NA |
| **Right-sided mCRC** | n=84 | n=103 | |
| Median OS, mo (95% CI) | 20.2 (15.2–32.0) | 23.2 (18.5–29.1) | 1.09 (0.79–1.51); *P*=0.605 |
| Median PFS, mo (95% CI) | 7.7 (6.3–10.6) | 10.6 (7.6–13.0) | 1.23 (0.91–1.67) |
| Response rate, % (95% CI) | 54.9 (43.5–65.9) | 63.1 (53.0–72.4) | NA |
| **Overall population** | n=400 | n=402 | |
| Median OS, mo (95% CI) | 36.2 (32.0–39.0) | 31.3 (29.3–34.1) | 0.84 (0.72–0.98); *P*=0.030 |
| Median PFS, mo (95% CI) | 12.9 (11.3–13.6) | 12.0 (11.3–13.5) | 1.01 (0.87–1.18) |
| Response rate, % (95% CI) | 74.9 (70.3–79.1) | 67.3 (62.4–71.9) | NA |

- Early tumor shrinkage (ETS) and depth of response (DpR) are on-treatment prognostic factors for favorable OS and progression-free survival (PFS) outcomes associated with chemotherapy for mCRC[2,3]
- Here, we report ETS and DpR from the PARADIGM trial and the correlation of these prognostic factors with OS and PFS
- The objective was to examine the correlation of ETS with OS and PFS

## Methods

**Figure 1: PARADIGM: Phase 3, randomized, open-label, multicenter study (NCT02394795)**




[a] Adjuvant fluoropyrimidine monotherapy allowed if completed >6 months before enrollment. [b] Until disease progression, unacceptable toxicity, withdrawal of consent or investigator's judgment or curative intent resection. [c] Primary tumor in descending colon, sigmoid colon, rectosigmoid, and rectum.
Data cutoff: January 14, 2022

- The relative change in the sum of the longest diameters of target lesions was analyzed between baseline and 8 weeks of treatment
- ETS was defined as ≥30% decrease in the sum of the longest diameters of target lesions at week 8; OS and PFS were compared in patients with or without ETS with stratification by treatment arm and primary tumor location (left-sided vs right-sided vs overall)
- DpR was defined as the maximum post-baseline percent decrease in the sum diameter of target lesions
- No formal hypothesis testing was performed
- Descriptive *P* values were determined based on a two-sided stratified log-rank test

## Results

- In patients with left-sided mCRC, the rate of ETS was higher with panitumumab than with bevacizumab **(Table 2)**
- A similar trend was observed in the overall population

**Table 2: Early tumor shrinkage at week 8**

| Parameter | Left-sided population | | Right-sided population | | Overall population | |
|---|---|---|---|---|---|---|
| | Panitumumab + mFOLFOX6 (n=312) | Bevacizumab + mFOLFOX6 (n=292) | Panitumumab + mFOLFOX6 (n=84) | Bevacizumab + mFOLFOX6 (n=103) | Panitumumab + mFOLFOX6 (n=400) | Bevacizumab + mFOLFOX6 (n=402) |
| Patients with ETS, n | 201 | 111 | 30 | 42 | 234 | 156 |
| Rate of ETS, % (95% CI) | 64 (59–70) | 38 (32–44) | 36 (26–47) | 41 (31–51) | 59 (54–63) | 39 (34–44) |

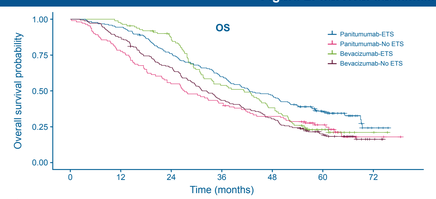
- Demographic and baseline characteristics across treatment arms for ETS evaluable patients are shown in **Table 3**

**Table 3: Demographic and baseline characteristics**

| Characteristic | Left-sided population | | | | Right-sided population | | | | Overall population | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Panitumumab + mFOLFOX6 | | Bevacizumab + mFOLFOX6 | | Panitumumab + mFOLFOX6 | | Bevacizumab + mFOLFOX6 | | Panitumumab + mFOLFOX6 | | Bevacizumab + mFOLFOX6 | |
| | ETS n=201 | No ETS n=111 | ETS n=111 | No ETS n=181 | ETS n=30 | No ETS n=54 | ETS n=42 | No ETS n=61 | ETS n=234 | No ETS n=166 | ETS n=156 | No ETS n=246 |
| **Age category, n (%)** | | | | | | | | | | | | |
| 20–64 years | 89 (44.3) | 49 (44.1) | 41 (36.9) | 86 (47.5) | 11 (36.7) | 15 (27.8) | 16 (38.1) | 23 (37.7) | 100 (42.7) | 64 (38.6) | 58 (37.2) | 110 (44.7) |
| 65–79 years | 112 (55.7) | 62 (55.9) | 70 (63.1) | 95 (52.5) | 19 (63.3) | 39 (72.2) | 26 (61.9) | 38 (62.3) | 134 (57.3) | 102 (61.4) | 98 (62.8) | 136 (55.3) |
| **Female, n (%)** | 57 (28.4) | 47 (42.3) | 35 (31.5) | 56 (30.9) | 13 (43.3) | 30 (55.6 ) | 18 (42.9) | 24 (39.3) | 71 (30.3) | 77 (46.4) | 54 (34.6) | 80 (32.5) |
| **ECOG performance status, n (%)** | | | | | | | | | | | | |
| 0 | 169 (84.1) | 92 (82.9) | 91 (82.0) | 140 (77.3) | 28 (93.3) | 37 (68.5) | 35 (83.3) | 47 (77.0) | 199 (85.0) | 129 (77.7) | 128 (82.1) | 191 (77.6) |
| 1 | 32 (15.9) | 19 (17.1) | 20 (18.0) | 41 (22.7) | 2 (6.7) | 16 (29.6) | 7 (16.7) | 14 (23.0) | 35 (15.0) | 36 (21.7) | 28 (17.9) | 55 (22.4) |
| **Primary tumor location, n (%)** | | | | | | | | | | | | |
| Left-sided | 202 (100.0) | 111 (100.0) | 111 (100.0) | 181 (100.0) | 0 | 0 | 0 | 0 | 201 (85.9) | 111 (66.9) | 111 (71.2) | 181 (73.6) |
| Right-sided | 0 | 0 | 0 | 0 | 30 (100.0) | 54 (100.0) | 42 (100.0) | 61 (100.0) | 30 (12.8) | 54 (32.5) | 42 (26.9) | 61 (24.8) |
| **Number of metastatic organs, n (%)** | | | | | | | | | | | | |
| 1 | 98 (48.8) | 57 (51.4) | 58 (52.3) | 89 (49.2) | 14 (46.7) | 26 (48.1) | 20 (47.6) | 24 (39.3) | 113 (48.3) | 83 (50.0) | 79 (50.6) | 115 (46.7) |
| ≥2 | 103 (51.2) | 54 (48.6) | 53 (47.7) | 92 (50.8) | 16 (53.3) | 28 (51.9) | 22 (52.4) | 37 (60.7) | 121 (51.7) | 83 (50.0) | 77 (49.4) | 131 (53.3) |
| **Metastatic site, n (%)** | | | | | | | | | | | | |
| Liver | 164 (81.6) | 61 (55.0) | 86 (77.5) | 120 (66.3) | 20 (66.7) | 29 (53.7) | 26 (61.9) | 40 (65.6) | 185 (79.1) | 90 (54.2) | 115 (73.7) | 163 (66.3) |
| Liver as the only metastatic site | 71 (35.3) | 19 (17.1) | 43 (38.7) | 46 (25.4) | 7 (23.3) | 7 (13.0) | 7 (16.7) | 14 (23.0) | 79 (33.8) | 26 (15.7) | 51 (32.7) | 62 (25.2) |
| **Prior treatment, n (%)** | | | | | | | | | | | | |
| Primary tumor resection | 127 (63.2) | 58 (52.3) | 71 (64.0) | 122 (67.4) | 19 (63.3) | 32 (59.3) | 30 (71.4) | 43 (70.5) | 148 (63.2) | 91 (54.8) | 104 (66.7) | 168 (68.3) |
| Radiotherapy | 1 (0.5) | 1 (0.9) | 1 (0.9) | 2 (1.1) | 0 | 0 | 0 | 0 | 1 (0.4) | 1 (0.6) | 1 (0.6) | 2 (0.8) |
| Adjuvant chemotherapy | 10 (5.0) | 7 (6.3) | 6 (5.4) | 10 (5.5) | 2 (6.7) | 3 (5.6) | 0 | 3 (4.9) | 12 (5.1) | 10 (6.0) | 7 (4.5) | 13 (5.3) |

- In the left-sided population, patients with ETS had longer PFS and OS than those without ETS, regardless of treatment with panitumumab or bevacizumab **(Figure 2)**

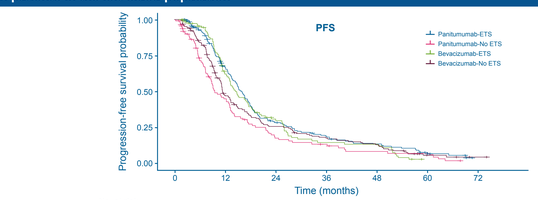
**Figure 2: Survival outcomes by ETS in patients in the left-sided population**




No. at risk

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Panitumumab-ETS | 201 | 190 | 152 | 120 | 94 | 51 | 3 |
| Panitumumab-No ETS | 111 | 86 | 61 | 46 | 35 | 17 | 2 |
| Bevacizumab-ETS | 111 | 108 | 93 | 58 | 41 | 14 | 2 |
| Bevacizumab-No ETS | 181 | 158 | 119 | 78 | 55 | 26 | 3 |

| Parameter | Panitumumab + mFOLFOX6 | | Bevacizumab + mFOLFOX6 | |
|---|---|---|---|---|
| | ETS | No ETS | ETS | No ETS |
| Median OS, mo (95% CI) | 42.6 (37.5–49.7) | 27.1 (21.8–36.3) | 41.3 (31.6–46.5) | 32.4 (27.9–36.8) |
| HR (95% CI); *P* value | 0.56 (0.42–0.75); <0.001 | | 0.69 (0.52–0.91); 0.010 | |



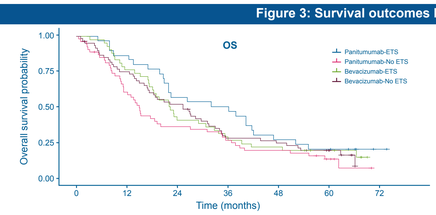

No. at risk

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Panitumumab-ETS | 201 | 106 | 43 | 27 | 18 | 8 | 0 |
| Panitumumab-No ETS | 111 | 43 | 16 | 11 | 6 | 5 | 0 |
| Bevacizumab-ETS | 111 | 61 | 26 | 12 | 11 | 0 | 0 |
| Bevacizumab-No ETS | 181 | 78 | 41 | 28 | 20 | 5 | 1 |

| Parameter | Panitumumab + mFOLFOX6 | | Bevacizumab + mFOLFOX6 | |
|---|---|---|---|---|
| | ETS | No ETS | ETS | No ETS |
| Median PFS, mo (95% CI) | 15.7 (13.9–17.6) | 9.6 (8.1–13.1) | 14.5 (12.6–17.6) | 11.5 (10.9–13.5) |
| HR (95% CI); *P* value | 0.62 (0.48–0.81); <0.001 | | 0.81 (0.62–1.06); 0.094 | |

- In the right-sided population, patients in the panitumumab arm who had ETS had longer OS than patients without ETS **(Figure 3)**

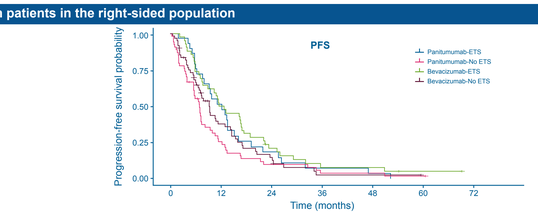
**Figure 3: Survival outcomes by ETS in patients in the right-sided population**




No. at risk

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Panitumumab-ETS | 30 | 26 | 17 | 15 | 8 | 6 | 1 |
| Panitumumab-No ETS | 54 | 32 | 19 | 14 | 10 | 5 | 0 |
| Bevacizumab-ETS | 42 | 32 | 18 | 12 | 9 | 6 | 0 |
| Bevacizumab-No ETS | 61 | 45 | 31 | 16 | 14 | 8 | 0 |

| Parameter | Panitumumab + mFOLFOX6 | | Bevacizumab + mFOLFOX6 | |
|---|---|---|---|---|
| | ETS | No ETS | ETS | No ETS |
| Median OS, mo (95% CI) | 34.1 (21.0–42.2) | 15.2 (11.3–20.2) | 22.3 (17.4–30.9) | 25.5 (16.9–31.6) |
| HR (95% CI); *P* value | 0.47 (0.28–0.79); 0.005 | | 0.94 (0.60–1.45); 0.746 | |



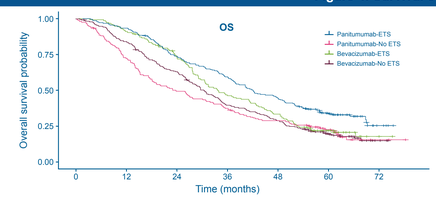

No. at risk

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Panitumumab-ETS | 30 | 14 | 5 | 2 | 1 | 0 | 0 |
| Panitumumab-No ETS | 54 | 13 | 5 | 2 | 2 | 1 | 0 |
| Bevacizumab-ETS | 42 | 21 | 8 | 3 | 3 | 1 | 0 |
| Bevacizumab-No ETS | 61 | 19 | 7 | 1 | 1 | 0 | 0 |

| Parameter | Panitumumab + mFOLFOX6 | | Bevacizumab + mFOLFOX6 | |
|---|---|---|---|---|
| | ETS | No ETS | ETS | No ETS |
| Median PFS, mo (95% CI) | 12.2 (7.7–15.2) | 6.8 (5.6–8.2) | 12.1 (7.6–16.7) | 9.2 (6.6–13.0) |
| HR (95% CI); *P* value | 0.66 (0.41–1.07); 0.084 | | 0.70 (0.46–1.07); 0.084 | |

- In the overall population, patients with ETS had longer PFS and OS than those without ETS, regardless of treatment with panitumumab or bevacizumab **(Figure 4)**

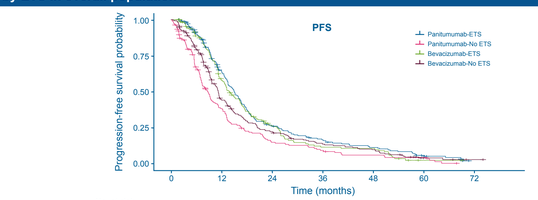
**Figure 4: Survival outcomes by ETS in overall population**




No. at risk

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Panitumumab-ETS | 234 | 219 | 172 | 138 | 104 | 58 | 4 |
| Panitumumab-No ETS | 166 | 119 | 81 | 61 | 46 | 22 | 2 |
| Bevacizumab-ETS | 156 | 142 | 112 | 71 | 50 | 20 | 2 |
| Bevacizumab-No ETS | 246 | 206 | 153 | 95 | 69 | 34 | 3 |

| Parameter | Panitumumab + mFOLFOX6 | | Bevacizumab + mFOLFOX6 | |
|---|---|---|---|---|
| | ETS | No ETS | ETS | No ETS |
| Median OS, mo (95% CI) | 42.1 (37.5–48.4) | 23.1 (17.7–31.0) | 33.8 (29.3–41.3) | 30.5 (26.9–34.0) |
| HR (95% CI); *P* value | 0.50 (0.39–0.64); <0.001 | | 0.78 (0.62–0.99); 0.036 | |



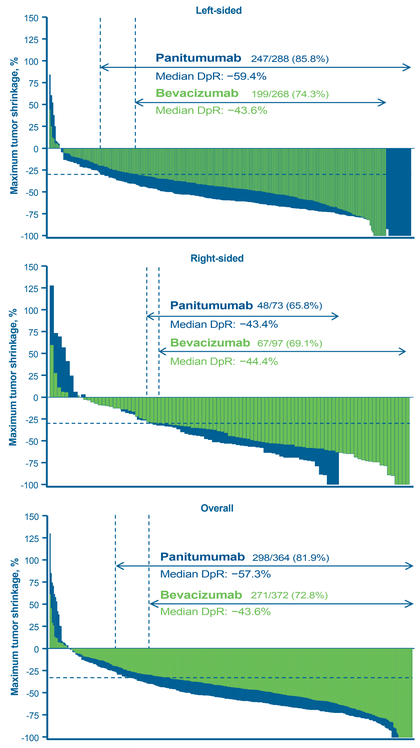

No. at risk

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Panitumumab-ETS | 234 | 122 | 49 | 30 | 20 | 9 | 0 |
| Panitumumab-No ETS | 166 | 57 | 22 | 13 | 8 | 6 | 0 |
| Bevacizumab-ETS | 156 | 83 | 34 | 15 | 14 | 1 | 0 |
| Bevacizumab-No ETS | 246 | 99 | 49 | 30 | 21 | 5 | 1 |

| Parameter | Panitumumab + mFOLFOX6 | | Bevacizumab + mFOLFOX6 | |
|---|---|---|---|---|
| | ETS | No ETS | ETS | No ETS |
| Median PFS, mo (95% CI) | 15.2 (13.6–16.7) | 8.9 (7.2–10.6) | 14.1 (12.0–16.7) | 11.2 (9.8–13.0) |
| HR (95% CI); *P* value | 0.58 (0.47–0.73); <0.001 | | 0.82 (0.66–1.02); 0.055 | |

- In left-sided and overall populations, DpR was greater with panitumumab compared with bevacizumab **(Figure 5)**
- Among patients with right-sided mCRC, DpR was similar across treatment groups

**Figure 5: DpR in mCRC populations**



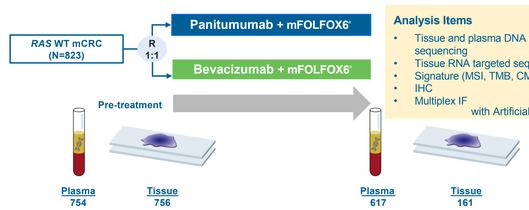

Horizontal dotted line at 30% indicates response per RECIST v1.1.
Depth of response was assessed in patients with measurable lesions at baseline.

## Conclusions

- Regardless of treatment with panitumumab or bevacizumab, patients with ETS had favorable survival outcomes compared with those without ETS
- Patients with left-sided mCRC treated with panitumumab had a higher rate of ETS and a greater DpR compared with patients treated with bevacizumab
- In patients with right-sided mCRC, ETS appeared to predict better survival outcomes with panitumumab but not with bevacizumab
  - This finding highlights the need for additional analyses to identify biomarkers that may predict a benefit with panitumumab in this population

## Future Directions: Biomarker Multi-omics Analysis

- A large-scale biomarker analysis is currently underway using plasma and tumor tissue samples collected pre- and post-treatments (NCT02394834)
- Potential biomarkers on outcomes will be reported in upcoming meetings
- Biomarkers that may predict a benefit with panitumumab in patients with mCRC will be identified




[c] Until disease progression, unacceptable toxicity, withdrawal of consent or investigator's judgement or curative intent resection. CMS, consensus molecular subtypes; DNA, deoxyribonucleic acid; IF, immunofluorescence; IFN, interferon gene signature; IHC, immunohistochemistry; mCRC, metastatic colorectal cancer; MSI, microsatellite instability; RNA, ribonucleic acid; TMB, tumor mutational burden; WT, wild type


## References

1. Yoshino T, et al. J Clin Oncol. 2022;40(17 suppl):LBA1.
2. Giessen C, et al. Cancer Sci. 2013;104:718-724.
3. Cremolini C, et al. Ann Oncol. 2015;26:1188-1194.



## Acknowledgments

The authors would like to thank the patients, their families, and their caregivers; the PARADIGM investigators and their team members at each study site; and colleagues from Takeda. Professional medical writing assistance was provided by Kalpana Vijayan, PhD, and Lauren Gallagher, RPh, PhD, of Peloton Advantage, LLC, an OPEN Health company, Parsippany, NJ, USA, and funded by Millennium Pharmaceuticals, Inc., Cambridge, MA, USA, a wholly owned subsidiary of Takeda Pharmaceutical Company Limited. The study was sponsored by Takeda.


## Abbreviations

CI, confidence interval; DpR, depth of response; ECOG, Eastern Cooperative Oncology Group; ETS, Early tumor shrinkage; HR, harzard ratio; mCRC, metastatic colorectal cancer; mFOLFOX6, modified FOLFOX6; NA, not applicable; OS, overall survival; PFS, progression-free survival; WT, wild type

## Disclosures

**KM:** Consulting/advisory role (Chugai Pharma, Astra Zeneca, Ono Pharmaceutical, Amgen); honoraria (Chugai Pharma, Ono Pharmaceutical, Takeda, Lilly, Bayer, Sanofi, Bristol Myers Squibb, Taiho Pharmaceutical); research grant (Taiho Pharmaceutical, Astellas Pharma, Amgen Astellas Biopharma, [rest to institution] MSD, Daiichi Sankyo, Shionogi, Kyowa Kirin, Gilead Sciences, Merck Serono, Pfizer, Sanofi, PAREXEL, Medscience Planning, Sumitomo Dainippon Pharma, Solasia Pharma); **JW:** Speakers bureau (Covidien Japan, Johnson & Johnson/Janssen, Lilly Japan); research funding (to institution: Medtronic, TERUMO); **KS:** Honoraria (Bristol Myers Squibb, Takeda); consulting/advisory role (Lilly, Bristol Myers Squibb, Takeda, Pfizer, Ono Pharmaceutical, MSD, Taiho, Novartis, Abbvie, GSK, Daiichi Sankyo, Boehringer Ingelheim, Janssen); research funding (all to institution: MSD, Daiichi Sankyo, Taiho, Chugai Pharma, Ono Pharmaceutical, Astellas Pharma, Medi Science, Eisai, Amgen); **KY:** Honoraria (Chugai Pharma, Daiichi Sankyo, Yakult Honsha, Takeda, Bayer, Merck Serono, Taiho Pharmaceutical, Lilly, Sanofi, Ono Pharmaceutical, MSD, Bristol Myers Squibb); research funding (to institution: Taiho Pharmaceutical); **HO:** The author has no relationships to disclose; **MS:** The author has no relationships to disclose; **HY:** The author has no relationships to disclose; **EO:** Speakers bureau (Chugai Pharma, Lilly Japan, Takeda, Ono Pharmaceutical, Bayer Yakuhin, Bristol Myers Squibb Japan); **TS:** Consulting/advisory role (Takeda); speakers bureau (Chugai Pharma, Lilly Japan, Taiho Oncology, Takeda, Bayer Yakuhin, Ono Yakuhin, Daiichi Sankyo/UCB Japan); **TN:** Honoraria (Chugai Pharma, Taiho Pharmaceutical, Kaken, Daiichi Sankyo, Eli Lilly Japan, Takeda, Merck, Bayer, Boehringer Ingelheim); research funding (to institution: Chugai, Taiho, Kaken, Daiichi-Sankyo, Eli Lilly Japan); **YK:** Speakers bureau (Ono, Taiho, Chugai, Eli Lilly, Bayer Yakuhin); research funding (Ono, Taiho, Daiichi Sankyo, Chugai, IQVIA); **TK:** Honoraria (Chugai, Yakult Honsha, Ono Pharmaceutical, Takeda, Lilly Japan, Taiho Pharmaceutical, Asahi Kasei); research funding (Chugai); **MH:** Employment (Takeda); **JS:** Employment (Takeda); **KY:** Honoraria (Chugai, J-Pharma, Johokiko, Triceps, CMIC Holdings); research funding (Taiho, Boehringer Ingelheim, Takeda, Daiichi Sankyo, Astellas); **KA:** The author has no relationships to disclose; **AO:** The author has no relationships to disclose; **HU:** Speakers bureau (Takeda, Chigai, Taiho); **KT:** Honoraria (Chugai Pharma, Novartis, Takeda, Miyarisan Pharmaceutical, Bristol Myers Squibb Japan, AstraZeneca); **TY:** Honoraria (Chugai Pharma, Merck, Bayer Yakuhin, Ono Pharmaceutical, MSD); research funding (to institution: MSD, Daiichi Sankyo, Ono Pharmaceutical, Taiho Pharmaceutical, Amgen, Sanofi, Pfizer, Genomedia Inc., Sysmex, Nippon Boehringer Ingelheim, Chugai Pharma)

For an e-Print, scan this QR code.




Presented at the 2022 Annual Meeting of the European Society of Medical Oncology (ESMO), 9–13 September, Paris, France



Email for questions or comments: Kei Muro, kmuro@aichi-cc.jp