Cases from the Community

Clinical Investigators Provide Perspectives on Actual Patients with Metastatic Colorectal, Gastric and Pancreatic Cancer

CME INFORMATION

TARGET AUDIENCE

This activity is intended for medical oncologists, hematologyoncology fellows, gastrointestinal surgeons and other healthcare providers involved in the treatment of gastrointestinal (GI) cancers.

OVERVIEW OF ACTIVITY

Cancer of the colon and rectum is the fourth most frequently diagnosed cancer and the second most common cause of death among all neoplasms in the United States, accounting for approximately 9% of all cancer deaths. Although individually less frequently encountered, the collection of other noncolorectal GI cancers account for more per annum cancerrelated deaths than those attributed to tumors of the colon and rectum combined. In 2014 in the United States alone it is estimated that these diseases culminated in 136,830 new cases and 50,310 deaths.

Current therapeutic management of colorectal cancer (CRC) is dependent on tumor stage at the time of initial diagnosis, status of surgical margins, patient performance status, age, prior treatment exposure and sites of metastasis for those with disease recurrence or de novo advanced cancer. Although these variables are helpful in guiding selection of treatment, the introduction of novel biomarkers, multigene signatures and molecular-targeted systemic agents has significantly refined the clinical algorithm such that individualized therapeutic approaches have become the standard. Similarly, local and systemic treatment approaches for each of the non-CRC GI cancers are continuously evolving. Like their more prevalent tumor counterparts, the impact of novel molecular-targeted and biologic therapies on the management of non-CRC GI cancers has been profound. By providing information on the latest research developments and their potential application to routine practice, this activity is designed to assist medical oncologists, hematology-oncology fellows, gastrointestinal surgeons and other healthcare providers with the formulation of up-to-date clinical management strategies for both CRC and select non-CRC GI cancers.

LEARNING OBJECTIVES

• Coordinate comprehensive biomarker analysis for patients diagnosed with advanced CRC, and use this information to guide evidence-based care.

- Communicate the benefits and risks of approved anti-VEGF, anti-EGFR and other targeted biologic therapies to patients with metastatic CRC, and develop an evidence-based algorithm to sequence available options based on diseaseand patient-specific characteristics.
- Individualize local and systemic treatment for patients with metastatic CRC that is isolated to the liver.
- Appreciate the recent FDA-approved indications for ramucirumab in advanced gastric or gastroesophageal junction cancer, and discern how this agent can be optimally integrated into clinical practice for patients with HER2-negative and HER2-positive disease.
- Implement a clinical plan for the management of advanced HER2-positive gastric cancer, incorporating existing and emerging targeted treatments.
- Appraise the rationale for and clinical data with investigational anti-PD-1 and/or anti-PD-L1 antibodies in patients with gastric cancer.
- Consider age, performance status and other clinical factors in the selection of systemic therapy for patients with metastatic pancreatic adenocarcinoma.
- Describe the mechanism of action of and available research data with ruxolitinib in pancreatic cancer, and use this information to counsel appropriate patients regarding ongoing trials evaluating this novel approach.
- Recall new data with other investigational agents demonstrating promising activity in colorectal, gastric and pancreatic cancers.

ACCREDITATION STATEMENT

Research To Practice is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

CREDIT DESIGNATION STATEMENT

Research To Practice designates this enduring material for a maximum of 2.75 *AMA PRA Category 1 Credits™*. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

HOW TO USE THIS CME ACTIVITY

This CME activity consists of a video component. To receive credit, the participant should watch the video, complete the Post-test with a score of 70% or better and fill out the Educational Assessment and Credit Form located at ResearchToPractice.com/ASCOGI15/CME.

CONTENT VALIDATION AND DISCLOSURES

Research To Practice (RTP) is committed to providing its participants with high-quality, unbiased and state-of-theart education. We assess potential conflicts of interest with faculty, planners and managers of CME activities. Real or apparent conflicts of interest are identified and resolved through a conflict of interest resolution process. In addition, all activity content is reviewed by both a member of the RTP scientific staff and an external, independent physician reviewer for fair balance, scientific objectivity of studies referenced and patient care recommendations.

FACULTY — The following faculty (and their spouses/partners) reported real or apparent conflicts of interest, which have been resolved through a conflict of interest resolution process:

Dirk Arnold, MD

Director Department, Medical Oncology Klinik fuer Tumorbiologie Freiburg, Germany

Advisory Committee: Amgen Inc, Bayer HealthCare Pharmaceuticals, EMD Serono Inc, Roche Laboratories Inc; Consulting Agreement: Sanofi; Contracted Research: EMD Serono Inc, Roche Laboratories Inc; Speakers Bureau: Bayer HealthCare Pharmaceuticals, EMD Serono Inc, Roche Laboratories Inc.

Tanios Bekaii-Saab, MD

Section Chief, Gastrointestinal Oncology Chair, OSUCCC Gastrointestinal Disease Research Group Professor of Medicine and Pharmacy The Ohio State University – James Cancer Hospital Columbus, Ohio

Consulting Agreements: Amgen Inc, Bayer HealthCare Pharmaceuticals, Boehringer Ingelheim Pharmaceuticals Inc, Bristol-Myers Squibb Company, Genentech BioOncology, Lilly, Pfizer Inc, Taiho Oncology Inc; **Contracted Research:** Oncolytics Biotech Inc; **Other Remunerated Activities:** Exelixis Inc, Polaris Group.

Johanna C Bendell, MD

Director, GI Oncology Research Associate Director, Drug Development Unit Sarah Cannon Research Institute Nashville, Tennessee

No real or apparent conflicts of interest to disclose.

Axel Grothey, MD

Professor of Oncology Department of Medical Oncology Mayo Clinic Rochester, Minnesota **Contracted Research:** Bayer HealthCare Pharmaceuticals, Eisai Inc, Genentech BioOncology, Lilly, Pfizer Inc, Sanofi.

Howard S Hochster, MD

Associate Director (Clinical Research) Yale Cancer Center Professor of Medicine Yale School of Medicine New Haven, Connecticut

Advisory Committee: Bayer HealthCare Pharmaceuticals, Genentech BioOncology; Consulting Agreements: Bayer HealthCare Pharmaceuticals, Genentech BioOncology, Genomic Health Inc, Roche Laboratories Inc, Sanofi; **Speakers Bureau:** Genomic Health Inc.

Philip A Philip, MD, PhD

Professor of Oncology and Medicine Director of GI and Neuroendocrine Tumors Vice President of Medical Affairs Karmanos Cancer Institute Wayne State University Detroit, Michigan

Advisory Committee: Amgen Inc, Bayer HealthCare Pharmaceuticals, Bristol-Myers Squibb Company, Genentech BioOncology, Novartis Pharmaceuticals Corporation, Onyx Pharmaceuticals, an Amgen subsidiary; Consulting Agreements: Amgen Inc, Bayer HealthCare Pharmaceuticals, Boehringer Ingelheim Pharmaceuticals Inc, Bristol-Myers Squibb Company, Genomic Health Inc, Lilly, Novartis Pharmaceuticals Corporation, Onyx Pharmaceuticals, an Amgen subsidiary, Roche Laboratories Inc, Sanofi; Contracted Research: Amgen Inc, Bayer HealthCare Pharmaceuticals, Bristol-Myers Squibb Company, Celgene Corporation, Genentech BioOncology, Lilly, Novartis Pharmaceuticals Corporation, Onyx Pharmaceuticals, an Amgen subsidiary, Roche Laboratories Inc, Sanofi; Speakers Bureau: Amgen Inc, Bayer HealthCare Pharmaceuticals, Celgene Corporation, Genentech BioOncology, Novartis Pharmaceuticals Corporation, Onyx Pharmaceuticals, an Amgen subsidiary, Roche Laboratories Inc., Sanofi.

CONSULTING MEDICAL ONCOLOGISTS — The following consulting medical oncologists (and their spouses/partners) reported real or apparent conflicts of interest, which have been resolved through a conflict of interest resolution process:

Lowell L Hart, MD

Scientific Director of Clinical Research Director, Drug Development Program Florida Cancer Specialists Fort Myers, Florida

Contracted Research: Genentech BioOncology, Lilly, Novartis Pharmaceuticals Corporation; **Speakers Bureau:** Genentech BioOncology, Novartis Pharmaceuticals Corporation.

Neil I Morganstein, MD

Chair of Leukemia/Lymphoma Board Carol G Simon Cancer Center Overlook Medical Center Summit, New Jersey

No real or apparent conflicts of interest to disclose.

Erik J Rupard, MD

Chief, Section of Hematology-Oncology McGlinn Cancer Institute The Reading Hospital and Medical Center Reading, Pennsylvania

No real or apparent conflicts of interest to disclose.

MODERATOR — Dr Love is president and CEO of Research To Practice, which receives funds in the form of educational grants to develop CME activities from the following commercial interests: AbbVie Inc, Amgen Inc, Astellas Scientific and Medical Affairs Inc, AstraZeneca Pharmaceuticals LP, Aveo Pharmaceuticals, Bayer HealthCare Pharmaceuticals, Biodesix Inc, Boehringer Ingelheim Pharmaceuticals Inc, Boston Biomedical Pharma Inc, Bristol-Myers Squibb Company, Celgene Corporation, Clovis Oncology, Daiichi Sankyo Inc, Dendreon Corporation, Eisai Inc, Exelixis Inc, Foundation Medicine, Genentech BioOncology, Genomic Health Inc, Gilead Sciences Inc, Incyte Corporation, Janssen Biotech Inc, Jazz Pharmaceuticals Inc, Lilly, Medivation Inc, Merck, Myriad Genetic Laboratories Inc, Novartis Pharmaceuticals Corporation, Novocure, Onyx Pharmaceuticals, an Amgen subsidiary, Pharmacyclics Inc, Prometheus Laboratories Inc, Regeneron Pharmaceuticals, Sanofi, Seattle Genetics, Sigma-Tau Pharmaceuticals Inc, Sirtex Medical Ltd, Spectrum Pharmaceuticals Inc, Taiho Oncology Inc, Takeda Oncology, Teva Oncology, Tokai Pharmaceuticals Inc and VisionGate Inc.

RESEARCH TO PRACTICE STAFF AND EXTERNAL

REVIEWERS — The scientific staff and reviewers for Research To Practice have no real or apparent conflicts of interest to disclose.

This educational activity contains discussion of published and/ or investigational uses of agents that are not indicated by the Food and Drug Administration. Research To Practice does not recommend the use of any agent outside of the labeled indications. Please refer to the official prescribing information for each product for discussion of approved indications, contraindications and warnings. The opinions expressed are those of the presenters and are not to be construed as those of the publisher or grantors.

This activity is supported by educational grants from Bayer HealthCare Pharmaceuticals, Boston Biomedical Pharma Inc, Genentech BioOncology, Incyte Corporation, Lilly, Sirtex Medical Ltd and Taiho Oncology Inc.

Hardware/Software Requirements:

A high-speed Internet connection A monitor set to 1280 x 1024 pixels or more Internet Explorer 7 or later, Firefox 3.0 or later, Chrome, Safari 3.0 or later Adobe Flash Player 10.2 plug-in or later Adobe Acrobat Reader (Optional) Sound card and speakers for audio

Last review date: May 2015

Expiration date: May 2016

SELECT PUBLICATIONS

Dirk Arnold, MD

A two arm safety study of regorafenib before or after SIR-Spheres microspheres (90Y) for the treatment of patients with refractory metastatic colorectal cancer with liver metastases. NCT02195011

EPOCH: A phase III clinical trial evaluating TheraSphere[®] in patients with metastatic colorectal carcinoma of the liver who have failed first line chemotherapy. NCT01483027

Folprecht G et al. Computed tomographic morphological evaluation of neoadjuvant chemotherapy. Effectiveness of the therapy for colorectal liver metastases. *Chirurg* 2014;85(1):31-6.

FOXFIREGlobal: Assessment of overall survival of FOLFOX6m plus SIR-Spheres microspheres versus FOLFOX6m alone as firstline treatment in patients with non-resectable liver metastases from primary colorectal carcinoma in a randomised clinical study. NCT01721954

Gibbs P et al. Selective internal radiation therapy (SIRT) with yttrium-90 resin microspheres plus standard systemic chemotherapy regimen of FOLFOX versus FOLFOX alone as first-line treatment of non-resectable liver metastases from colorectal cancer: The SIRFLOX study. *BMC Cancer* 2014;14:897.

Hendlisz A et al. Phase III trial comparing protracted intravenous fluorouracil infusion alone or with yttrium-90 resin microspheres radioembolization for liver-limited metastatic colorectal cancer refractory to standard chemotherapy. *J Clin Oncol* 2010;28(23):3687-94.

Nordlinger B et al. Perioperative chemotherapy with FOLFOX4 and surgery versus surgery alone for resectable liver metastases from colorectal cancer (EORTC Intergroup trial 40983): A randomised controlled trial. *Lancet* 2008;371(9617):1007-16.

SIR-step: A randomised phase III trial comparing hepatic arterial injection of yttrium-90 resin microspheres (SIR-Spheres) plus systemic maintenance therapy versus systemic maintenance therapy alone for patients with unresectable liver metastases from colorectal cancer which are controlled after induction systemic therapy. NCT01895257

Tanios Bekaii-Saab, MD

A randomized, multicenter, adaptive phase II/III study to evaluate the efficacy and safety of trastuzumab emtansine (T-DM1) versus taxane (docetaxel or paclitaxel) in patients with previously treated locally advanced or metastatic HER2-positive gastric cancer, including adenocarcinoma of the gastroesophageal junction. NCT01641939

Bang YJ et al. Trastuzumab in combination with chemotherapy versus chemotherapy alone for treatment of HER2-positive advanced gastric or gastro-oesophageal junction cancer (ToGA): A phase 3, open-label, randomised controlled trial. *Lancet* 2010;376(9742):687-97.

Baselga J et al. A phase III, randomized, double-blind, placebo-controlled registration trial to evaluate the efficacy and safety of pertuzumab + trastuzumab + docetaxel versus placebo + trastuzumab + docetaxel in patients with previously untreated HER2-positive metastatic breast cancer (CLEOPATRA). San Antonio Breast Cancer Symposium 2011;Abstract S5-5.

Boku N. HER2-positive gastric cancer. Gastric Cancer 2014;17(1):1-12.

Hecht JR et al. Lapatinib in combination with capecitabine plus oxaliplatin in HER2-positive advanced or metastatic gastric, esophageal, or gastroesophageal adenocarcinoma: The TRIO-013/LOGiC trial. *Proc ASCO* 2013; Abstract LBA4001.

Kang YK et al. A phase IIa dose-finding and safety study of first-line pertuzumab in combination with trastuzumab, capecitabine and cisplatin in patients with HER2-positive advanced gastric cancer. *Br J Cancer* 2014;111(4):660-6.

Lordick F et al. **Optimal chemotherapy for advanced gastric cancer: Is there a global consensus?** Gastric Cancer 2014;17(2):213-25.

Muro K et al. Relationship between PD-L1 expression and clinical outcomes in patients with advanced gastric cancer treated with the anti-PD-1 monoclonal antibody pembrolizumab (Pembro; MK-3475) in KEYNOTE-012. Gastrointestinal Cancers Symposium 2015; Abstract 3.

Muro K et al. A phase 1b study of pembrolizumab (Pembro; MK-3475) in patients with advanced gastric cancer. *Proc ESMO* 2014; Abstract LBA15.

Ribas A. Tumor immunotherapy directed at PD-1. N Engl J Med 2012;366(26):2517-9.

Tabernero J et al. Pertuzumab with trastuzumab and chemotherapy in patients with HER2-positive metastatic gastric or gastroesophageal junction (GEJ) cancer: An international phase III study (JACOB). *Proc ASCO* 2013; Abstract TPS4150. Wilke H et al. Ramucirumab plus paclitaxel versus placebo plus paclitaxel in patients with previously treated advanced gastric or gastro-oesophageal junction adenocarcinoma (RAINBOW): A double-blind, randomised phase 3 trial. *Lancet Oncol* 2014;15(11):1224-35.

Johanna C Bendell, MD

Burris HA et al. Improvements in survival and clinical benefit with gemcitabine as first-line therapy for patients with advanced pancreas cancer: A randomized trial. *J Clin Oncol* 1997;15(6):2403-13.

Cervantes F et al. Three-year efficacy, safety, and survival findings from COMFORT-II, a phase 3 study comparing ruxolitinib with best available therapy for myelofibrosis. *Blood* 2013;122(25):4047-53.

Conroy T et al. FOLFIRINOX versus gemcitabine for metastatic pancreatic cancer. N Engl J Med 2011;364(19):1817-25.

Harrison C et al. JAK inhibition with ruxolitinib versus best available therapy for myelofibrosis. *N Engl J Med* 2012;366(9):787-98.

Hurwitz H et al. Results from a phase 2 study of ruxolitinib or placebo with capecitabine as second-line therapy in patients with metastatic pancreatic cancer: The RECAP trial. ESMO 16th World Congress on Gastrointestinal Cancer 2014;Abstract 0-0026.

Ko AH et al. A multinational phase 2 study of nanoliposomal irinotecan sucrosofate (PEP02, MM-398) for patients with gemcitabine-refractory metastatic pancreatic cancer. *Br J Cancer* 2013;109(4):920-5.

Ramanathan RK et al. Pilot study in patients with advanced solid tumors to evaluate feasibility of ferumoxytol (FMX) as tumor imaging agent prior to MM-398, a nanoliposomal irinotecan. *Proc AACR* 2014; Abstract CT224.

Roy AC et al. A randomized phase II study of PEP02 (MM-398), irinotecan or docetaxel as a second-line therapy in patients with locally advanced or metastatic gastric or gastro-oesophageal junction adenocarcinoma. *Ann Oncol* 2013;24(6):1567-73.

Verstovsek S et al. A double-blind, placebo-controlled trial of ruxolitinib for myelofibrosis. *N Engl J Med* 2012;366(9):799-807.

Von Hoff D et al. NAPOLI-1: Randomized phase 3 study of MM-398 (nal-IRI), with or without 5-fluorouracil and leucovorin, in metastatic pancreatic cancer progressed on or following gemcitabine-based therapy. ESMO 16th World Congress on Gastrointestinal Cancer 2014; Abstract 0-0003.

Von Hoff DD et al. Increased survival in pancreatic cancer with *nab*-paclitaxel plus gemcitabine. *N Engl J Med* 2013;369(18):1691-703.

Axel Grothey, MD

A randomized, open-label phase III Intergroup study: Effect of adding bevacizumab to cross over fluoropyrimidine based chemotherapy (CTx) in patients with metastatic colorectal cancer and disease progression under first-line standard CTx/ bevacizumab combination. NCT00700102

Arnold D et al. Maintenance strategy with fluoropyrimidines plus bevacizumab, bev alone, or no treatment, following a standard combination of FP, oxaliplatin, and bev as first-line treatment for patients with metastatic colorectal cancer: A phase III non-inferiority trial (AIO KRK 0207). *Proc ASCO* 2014;Abstract 3503.

Bennouna J et al. Continuation of bevacizumab after first progression in metastatic colorectal cancer (ML18147): A randomised phase 3 trial. *Lancet Oncol* 2013;14(1):29-37.

Hegewisch-Becker S et al. Maintenance strategy with fluoropyrimidines (FP) plus bevacizumab (Bev), Bev alone or no treatment, following a 24-week first-line induction with FP, oxaliplatin (Ox) and Bev for patients with metastatic colorectal cancer: Mature data and subgroup analysis of the AIO KRK 0207 phase III study. *Proc ESMO* 2014;Abstract 4980.

Koopman M et al. Final results and subgroup analyses of the phase 3 CAIRO3 study: Maintenance treatment with capecitabine + bevacizumab versus observation after induction treatment with chemotherapy + bevacizumab in metastatic colorectal cancer (mCRC). *Proc ASCO* 2014;Abstract 3504.

Randomized three arm phase III trial on induction treatment with a fluoropyrimidine-, oxaliplatin- and bevacizumab-based chemotherapy for 24 weeks followed by maintenance treatment with a fluoropyrimidine and bevacizumab versus bevacizumab alone versus no maintenance treatment and reinduction in case of progression for first-line treatment of patients with metastatic colorectal cancer. NCT00973609

Tabernero J et al. RAISE: A randomized, double-blind, multicenter phase III study of irinotecan, folinic acid, and 5-fluorouracil plus ramucirumab or placebo in patients with metastatic colorectal carcinoma progressive during or following first-line combination therapy with bevacizumab, oxaliplatin, and a fluoropyrimidine. Gastrointestinal Cancers Symposium 2015; Abstract 512.

Tabernero J et al. Aflibercept versus placebo in combination with fluorouracil, leucovorin and irinotecan in the treatment of previously treated metastatic colorectal cancer: Prespecified subgroup analyses from the VELOUR trial. *Eur J Cancer* 2014;50(2):320-31.

Van Cutsem E et al. Addition of aflibercept to fluorouracil, leucovorin, and irinotecan improves survival in a phase III randomized trial in patients with metastatic colorectal cancer previously treated with an oxaliplatin-based regimen. *J Clin Oncol* 2012;30(28):3499-506.

Howard S Hochster, MD

CONCUR: A randomized, double-blind, placebo-controlled Phase III study of regorafenib plus best supportive care (BSC) versus placebo plus BSC in Asian subjects with metastatic colorectal cancer (CRC) who have progressed after standard therapy. NCT01584830

Grothey A et al. Regorafenib monotherapy for previously treated metastatic colorectal cancer (CORRECT): An international, multicentre, randomised, placebo-controlled, phase 3 trial. *Lancet* 2013;381(9863):303-12.

RECOURSE: Randomized, double-blind, phase 3 study of TAS-102 plus best supportive care (BSC) versus placebo plus BSC in patients with metastatic colorectal cancer refractory to standard chemotherapies. NCT01607957

Philip A Philip, MD, PhD

A randomised open-label phase II study to assess the efficacy and safety of AZD4547 monotherapy versus paclitaxel in patients with advanced gastric adenocarcinoma (including adenocarcinoma of the lower third of the oesophagus or the gastro-oesophageal junction) with FGFR2 polysomy or gene amplification. NCT01457846

A randomized, double-blinded, placebo controlled, multicentre phase III study to assess the efficacy and safety of olaparib (AZD2281) in combination with paclitaxel, compared to placebo in combination with paclitaxel, in Asian patients with advanced gastric cancer (including the gastro-oesophageal junction) who have progressed following first line therapy. NCT01924533

A randomized, multicenter, adaptive Phase II/III study to evaluate the efficacy and safety of trastuzumab emtansine (T-DM1) versus taxane (docetaxel or paclitaxel) in patients with previously treated locally advanced or metastatic Her2-positive gastric cancer, including adenocarcinoma of the gastroesophageal junction. NCT01641939

A randomized, open-label, Japan-Korea collaborative phase 3 study to compare the efficacy of nimotuzumab and irinotecan combination therapy versus irinotecan monotherapy as second line treatment in subjects with advanced or recurrent gastric and gastroesophageal junction cancer. NCT01813253

AVAGAST: A double-blind, randomised, multicenter, phase III study of bevacizumab in combination with capecitabine and cisplatin versus placebo in combination with capecitabine and cisplatin, as first-line therapy in patients with advanced gastric cancer. NCT00548548

BRIGHTER: A phase III clinical trial of BBI608 plus weekly paclitaxel versus placebo plus weekly paclitaxel in adult patients with advanced, previously treated gastric and gastro-esophageal junction cancer. NCT02178956

Cancer Genome Atlas Research Network. **Comprehensive molecular characterization of gastric adenocarcinoma.** *Nature* 2014;513(7517):202-9.

Dutton SJ et al. Patient-reported outcomes from a phase III multicenter, randomized, double-blind, placebo-controlled trial of gefitinib versus placebo in esophageal cancer progressing after chemotherapy: Cancer Oesophagus Gefitinib (COG). Gastroin-testinal Cancers Symposium 2013; Abstract 06.

Fuchs CS et al. Ramucirumab monotherapy for previously treated advanced gastric or gastro-oesophageal junction adenocarcinoma (REGARD): An international, randomised, multicentre, placebo-controlled, phase 3 trial. *Lancet* 2014;383(9911):31-9.

Hitron M et al. A phase 1b study of the cancer stem cell inhibitor BBI608 administered with paclitaxel in patients with advanced malignancies. *Proc ASCO* 2014; Abstract 2530.

LOGiC: A phase III study for ErbB2 positive advanced or metastatic gastric, esophageal, or gastroesophageal junction adenocarcinoma treated with capecitabine plus oxaliplatin with or without lapatinib. NCT00680901

Lordick F et al. Capecitabine and cisplatin with or without cetuximab for patients with previously untreated advanced gastric cancer (EXPAND): A randomised, open-label phase 3 trial. *Lancet Oncol* 2013;14(6):490-9.

MetGastric: A randomized, phase III, multicenter, double-blind, placebo-controlled study evaluating the efficacy and safety of onartuzumab (MetMAb) in combination with 5-fluorouracil, folinic acid, and oxaliplatin (mFOLFOX6) in patients with metastatic HER2-negative, MET-positive gastroesophageal cancer. NCT01662869

Ohtsu A et al. Everolimus for previously treated advanced gastric cancer: Results of the randomized, double-blind, phase III GRANITE-1 study. *J Clin Oncol* 2013;31(31):3935-43.

ONO-4538 phase III study a multicenter, double-blind, randomized study in patients with unresectable advanced or recurrent gastric cancer. NCT02267343

Qin S et al. Phase III study of apatinib in advanced gastric cancer: A randomized, double-blind, placebo-controlled trial. *Proc* ASCO 2014; Abstract 4003.

RILOMET-1: A phase 3, multicenter, randomized, double-blind, placebo controlled study of rilotumumab (AMG102) with epirubicin, cisplatin, and capecitabine (ECX) as first-line therapy in advanced MET-positive gastric or gastroesophageal junction adenocarcinoma. NCT01697072

Tabernero J et al. Pertuzumab with trastuzumab and chemotherapy in patients with HER2-positive metastatic gastric or gastroesophageal junction (GEJ) cancer: An international phase III study (JACOB). *Proc ASCO* 2013; Abstract TPS4150.

Waddell T et al. Epirubicin, oxaliplatin, and capecitabine with or without panitumumab for patients with previously untreated advanced oesophagogastric cancer (REAL3): A randomised, open-label phase 3 trial. *Lancet Oncol* 2013;14(6):481-9.

Wilke H et al. Ramucirumab plus paclitaxel versus placebo plus paclitaxel in patients with previously treated advanced gastric or gastro-oesophageal junction adenocarcinoma (RAINBOW): A double-blind, randomised phase 3 trial. *Lancet Oncol* 2014;15(11):1224-35.