The 2013 Annual Meeting of the American Society of Clinical Oncology

Highlights of the 2013 ASCO Annual Meeting, May 31 - June 4, Chicago, ILL, USA

T. Feys, MSc, MBA[1]

From May 31st till June 4th, Chicago again hosted the annual meeting of the American Society of Clinical Oncology (ASCO). The ASCO Annual Meeting brought together over 25,000 oncology professionals from a broad range of specialties. This summary does not aim at giving a complete overview of the meeting but will briefly touch on twenty key studies presented at the meeting. All abstracts cited in this summary can be consulted in more detail at the ASCO website (am.asco.org).

(Belg J Med Oncol 2013;7(4):127-32)

Highlights in thoracic cancer

Tumour profiling and biomarker-guided therapy are feasible

A large French database study demonstrated that genetic tumour profiling in patients with non–small-cell lung cancer (NSCLC) is feasible, and is already helping physicians guide treatment in many patients.[1] The project so far includes six markers: *EGFR, KRAS, ALK, BRAF, HER2,* and *PI3K* and the presented data were based on the first 10,000 patients included in the database. In approximately 46% of the cases, a molecular alteration was seen, of which *KRAS* mutations were most common (27%). *EGFR*-activating mutation was seen in 9.5%, 0.8% had a *EGFR*-resistant mutation, 0.9% had a *HER2* mutation, 1.7% harboured a *BRAF* mutation, 2.6% had a *PI3K* mutation, and *ALK* rearrangements were seen in 3.7% of patients. In a second step, physicians used the results of tumour profiling to guide their first-line treatment decisions in 57% of evaluable cases. The median overall survival (OS) in the study was 11.4 months.[1] However, these are very preliminary data in only 2,250 evaluable patients. The database is continuing to grow, and the final cohort will contain around 19,000 biomarker analyses.

Phase III study of erlotinib versus docetaxel as second- or third-line therapy for NSCLC

During ASCO 2013, results of the Japanese DELTA study (N= 301) were presented in which patients who underwent one or two previous chemotherapy treatments were randomised between erlotinib or docetaxel. The primary endpoint of the study was not met, as the PFS did not differ significantly between both study arms in the intent-to-treat population (2.0 months with erlotinib versus 3.2 months with docetaxel; p= 0.09).[2] A subgroup-analysis with EGFR wild-type patients did show a significant progression-free survival (PFS) advantage with docetaxel over erlotinib (1.3 versus 2.9 months, p= 0.01).[2] However, this did not translate into an OS benefit, limiting the clinical significance of these data in a palliative setting.

GALAXY-1: paving the way for heat shock protein inhibition in lung cancer

The randomised phase II GALAXY-1 study found that a novel heat shock protein (Hsp) 90 inhibitor, ganetespib, when combined with docetaxel in second-line therapy, leads to longer OS compared to standard second-

[1] Ariez International, Oude Houtlei 118, 9000 Ghent, Belgium.

Please send all correspondence to: T. Feys, Ariez International, Oude Houtlei 118, 9000 Ghent, Belgium. E-mail: t.feys@ariez.com.

Conflict of interest: The author has nothing to disclose and indicates no potential conflict of interest.

Keywords: breast cancer, cervical cancer, gastrointestinal cancer, glioblastoma, melanoma, NSCLC, ovarian cancer, thyroid cancer, urogenital cancer.

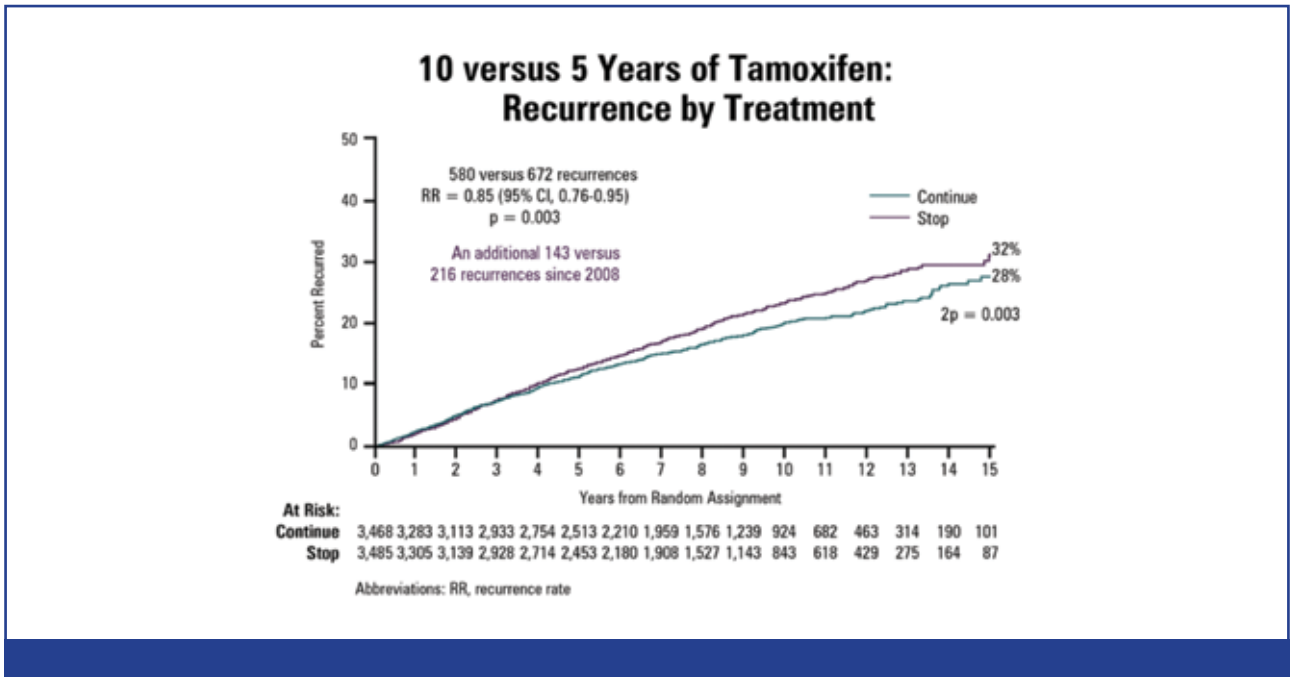

Figure 3. Recurrence rate in the aTTom study.[10]

line docetaxel alone in patients with advanced lung adenocarcinoma who progressed after initial therapy. In the study, 252 patients were randomly assigned to treatment with docetaxel alone, or docetaxel plus ganetespib.[3] Patients in the ganetespib arm had a longer OS than those in the docetaxel alone arm (9.8 versus 7.4 months, HR: 0.73; p =0.0093). The median PFS was 4.5 months for the combination and 3.2 months for treatment with docetaxel alone (p= 0.108). Of note, an explorative subgroup analysis revealed that patients with more than six months from time of diagnosis with advanced lung cancer derived the largest benefit from the combination, experiencing a 67% improvement in OS.[3] This promising new therapy with ganetespib is currently being evaluated in the phase III GALAXY-2 study.

Highlights in gastrointestinal cancer

Nab-paclitaxel, a new standard in metastatic pancreatic cancer

Results from the phase III MPACT study (N=861) in patients with treatment-naive metastatic pancreatic cancer show that the addition of (nab)-paclitaxel to gemcitabine improves OS versus gemcitabine alone.[4] The combination therapy led to a 28% reduction in mortality risk (median OS: 8.5 versus 6.7 months, p= 0.000015) and a 31% reduction in risk of disease progression (median PFS: 5.5 versus 3.7 months; p= 0.000024). Nab-paclitaxel was associated with a 59% increase in survival at 12 months (p=0.0002) and 78% increase at 18 months (p=0.0080). Nab-paclitaxel plus gemcitabine was superior in all subgroups and interestingly, the poorer the prognostic factor, the more favourable the hazard ratio. More grade 3/4 adverse events were observed with the combination, most commonly neutropenia (38% versus 27%), fatigue (17% versus 7%), and neuropathy (17% versus 1%). However, neuropathy was rapidly reversible, and 44% of these patients was able to resume treatment.[4]

Maintenance is a feasible strategy in metastatic colorectal cancer

The CAIRO3 study investigated the efficacy of maintenance treatment with capecitabine plus bevacizumab versus observation in metastatic colorectal cancer (mCRC) patients not progressing during induction treatment with capecitabine, oxaliplatin and bevacizumab (CAPOX-B). A total of 558 previously untreated mCRC patients with stable disease or better after six cycles of CAPOX-B were randomised between observation or maintenance treatment with capecitabine and bevacizumab. Upon first progression (PFS1), patients were treated with CAPOX-B until second progression (PFS2, primary endpoint). Maintenance treatment with capecitabine plus bevacizumab after six cycles CAPOX-B resulted in a significantly longer PFS1 than observation (8.5 versus 4.1 months; p< 0.001). In addition to this, PFS2 (11.8 versus 10.5 months; p=0.007), time to

second progression (19.8 versus. 15.0 months; p<0.01) and OS (21.7 versus 18.2 months; p=0.035) were also significantly longer in the maintenance arm.[5] As such, these data demonstrate the feasibility of maintenance therapy in this setting. Nevertheless, the pharmaco-economic impact of this strategy requires further evaluation.

No benefit from adding cetuximab to FOLFOX in patients with operable metastases from colorectal cancer

Cetuximab administered with FOLFOX6 perioperatively and postoperatively was associated with significantly shorter PFS for patients with wild-type *KRAS* colorectal cancer with resectable liver metastases, according to data presented for the New EPOC study (PFS: 13.8 months versus 20.2 months for patients receiving only FOLFOX6; p<0.03).[6] Moreover, OS was worse for patients receiving cetuximab (p<0.16). On the recommendation of the Independent Data Monitoring Safety Board, the New EPOC study was terminated when it was determined that the cetuximab arm of the study was unlikely to provide better PFS compared to the FOLFOX6-only arm.[6]

Cetuximab is superior to bevacizumab in first-line treatment of advanced colorectal cancer

The phase III FIRE-3 trial showed that first-line cetuximab plus FOLFIRI offers a roughly four-month survival advantage for patients with mCRC, compared to bevacizumab plus FOLFIRI. In the study at hand, 592 patients with wild-type KRAS mCRC were randomly assigned to first-line therapy with FOLFIRI plus cetuximab or FOLFIRI plus bevacizumab. The overall response rate favoured FOLFIRI plus cetuximab, but reached the level of significance only in assessable patients (patients with at least one imaging procedure after baseline, N=526) (72.2% versus 63.1%; p=0.017). The median PFS was nearly identical in the two arms (10.0 versus 10.3 months), Surprisingly, the OS was markedly longer in the cetuximab arm (28.7 months) compared to the bevacizumab arm (25.0 months) (HR[95%CI]: 0.77[0.62-0.96]; p=0.017).[7]

Highlights in urogenital cancer

First-line sunitinib followed by everolimus remains standard sequence in metastatic renal cell carcinoma

The phase II RECORD-3 study in patients with advanced renal cell carcinoma (RCC) show that the standard sequence of the multitargeted tyrosine kinase inhibitor sunitinib followed by the mTOR inhibitor everolimus extends survival compared to the reverse sequence of first-line everolimus followed by sunitinib. In RECORD-3, 471 clear or non-clear cell metastatic RCC patients were randomly assigned to first-line therapy with everolimus or sunitinib until progression. After a two to six week washout period, they could switch to the alternative drug. The median PFS was 7.9 months for first-line everolimus compared to 10.7 months for first-line sunitinib (HR:1.43).[8] As such, the primary endpoint of non-inferiority of everolimus followed by sunitinib was not met. Moreover, a trend towards a better OS was seen for the sunitinib/everolimus sequence. Based on these findings the treatment paradigm remains a tyrosine kinase inhibitor followed by an mTor inhibitor.

Dose dense chemotherapy as new standard for poor-risk germ cell tumours

In the GETUG 13 study, 263 patients with various poor-risk germ cell tumours were enrolled, and 254 underwent tumour marker analysis on day 21 after the first cycle of BEP. Of these, 51 patients with favourable tumour decline continued on BEP for a total of four courses, and 203 patients with unfavourable tumour decline were randomized to continue on BEP for a total of four courses (N=105) or to receive a dose-dense regimen (N=98) consisting of paclitaxel-BEP plus oxa-liplatin 130 mg/m^2 on day 10 for two cycles, followed by two cycles of cisplatin 100 mg on day 1; ifosfamide 2 mg/m^2 on days 10, 12, and 14; and continuous-infusion bleomycin 25 U/d on days 10-14. At 3 years, the primary endpoint of PFS was 59% in the dose-dense group and 48% in the unfavourable tumour decline group randomised to BEP (HR: 0.66; pv0.05). Moreover. there was a trend for better OS in patients receiving the dose-dense regimen, with 3-year rates of 73% in the dose-dense group and 65% in the unfavourable BEP arm (HR: 0.78; p=0.34).[9] Toxicities in the dose-dense and BEP groups were comparable for neutropaenic fever (17% in both), toxic deaths (1% in both), and second cancers (1% versus. 4%). Patients in the dose-dense arm did experience more neurotoxicities with grade 2 or higher (23% versus. 4%), and were less likely to undergo salvage high-dose chemotherapy and transplant (6% versus 16%; p= 0.01).[9]

Highlights in breast cancer

Extending adjuvant tamoxifen reduces breast cancer recurrence and mortality

Extending the duration of adjuvant tamoxifen therapy from five to ten years in women with early-stage breast cancer reduces the risk of recurrence and breast cancer

mortality, according to updated results of the aTTom trial. Compared to five years of tamoxifen, ten years of tamoxifen was associated with a significant 15% reduction in the risk of recurrence (p=0.003) *(Figure 1)* and a significant 25% reduction in the risk of breast cancer mortality starting at year 10 (p=0.007) among the 6,953 women enrolled in the trial.[10] These findings aligned closely with those from the recently published ATLAS trial. A pooled analysis of the 17,477 patients enrolled in aTTom and ATLAS showed a 9% reduction in the risk of death after patients received 10 versus 5 years of tamoxifen for the entire follow-up period (RR 0.91, 95% CI [0.84, 0.97]; p=0.008); the relative risk reduction increased to 16% starting at year 10 (RR 0.84, 95% CI [0.77, 0.93]; p=0.0007).[10]

Good local control with axillary radiotherapy in node-positive breast cancer

The AMAROS study tested radiotherapy versus dissection in women with a positive sentinel lymph node. In total, 4,806 patients were included, 1,425 of whom (29.7%) had a positive axillary sentinel node. In the intent-to-treat protocol, 744 patients were randomly assigned to undergo dissection and 681 underwent axillary radiotherapy. The five-year axillary recurrence rate was very low in both groups: 0.43% in the dissection group and 1.19% in the radiotherapy group.[11] The disease-free survival (DFS) rates were similar, with a hazard ratio for dissection of 1.17 (95% CI [0.93, 1.51]; p= 0.18). There was also no difference in OS (p=0.34) with 53 (7.1%) deaths as a result of breast cancer in the dissection group and 54 (7.9%) in the radiotherapy group. After one year, 40% of patients who underwent dissection had lymphoedema versus 21.7% of patients treated with radiotherapy (p<0.0001). This advantage was also seen at three years (29.8 versus 16.7%; p< 0.0001) and even after five years (28.0 versus 13.6%; p<0.0001).[11]

Weekly adjuvant paclitaxel as effective and more tolerable than an every-two-week regimen

For patients with high-risk, operable, invasive breast cancer undergoing adjuvant therapy, weekly administration of paclitaxel appears to yield similar efficacy to an every-two-week regimen but is better tolerated, according to results from the randomized SWOG 0221 trial. After completion of adjuvant doxorubicin and cyclophosphamide, six cycles of weekly paclitaxel (80 mg/m^2) demonstrated equivalent efficacy to six cycles of every-two-week paclitaxel (175 mg/m^2) after a median follow-up of 4.4 years.[12] However, the weekly regimen was associated with fewer allergic reactions, (1.4% versus 0.6%; p=0.035) and less musculoskeletal pain (11% versus 3%; p<0.001) and neurologic toxicity (17% versus 10%; p<0.001).[12]

Highlights in gynaecological cancers

Bevacizumab prolongs survival for women with recurrent or advanced cervical cancer

In the phase III GOG 240 study patients were assigned to either of two chemotherapy regimens involving cisplatin plus paclitaxel or topotecan and paclitaxel, and then randomly assigned to receive bevacizumab or not. A total of 225 patients received chemotherapy alone and 227 received chemotherapy along with bevacizumab. With a median follow-up of 20.8 months, the median OS was 17 months with bevacizumab versus 13.3 months without it (HR[97.6%CI]: 0.71[0.54, 0.94]; p=0.0035). Bevacizumab also significantly improved PFS over chemotherapy alone (8.2 versus 5.9, HR[95%CI] 0.67[0.54, 0.82]; p=0.0002) and was associated with a better response rate (48% versus 36%; p=0.00807).[13] This is the first time that a targeted agent was shown to improve survival in gynaecological cancer.

Confirmed benefit of neoadjuvant chemotherapy for advanced ovarian cancer

In the phase III non-inferiority CHORUS study, 520 patients with stage III/IV ovarian cancer were randomised between neoadjuvant chemotherapy (three cycles) followed by surgery and three additional cycles of chemotherapy (N=274) or surgery followed by six cycles of chemotherapy (N=276). Optimal surgical debulking was reported in 16% of the upfront surgery group compared to 40% in the neoadjuvant arm.[14] Furthermore, less postoperative complications were seen with neoadjuvant chemotherapy. Mortality within 28 days was 5.6% in the upfront surgery arm versus 0.5% in the neoadjuvant group.[14] PFS and OS were comparable in both study arms. This study confirms the data from EORTC 55971 and demonstrates that neoadjuvant chemotherapy is as effective as upfront surgery and results in better surgical cytoreduction.

PFS gain with maintenance pazopanib in women with ovarian cancer

The phase III AGO-OVAR 16 trial randomly assigned 940 patients with FIGO stage II to IV ovarian, fallopian tube, or primary peritoneal cancer who had been initially treated with surgery and chemotherapy to receive

800mg of pazopanib (N=472) or placebo (N=468) daily for up to 24 months. Median PFS was about 5.6 months longer with the maintenance therapy, as the median PFS was 17.9 months in the treatment group compared to 12.3 months in the group receiving placebo (HR[95%CI]: 0.766[0.643, 0.911]; p=0.0021).[15] The most frequent grade 3/4 adverse event was hypertension, which occurred in 31% of patients in the pazopanib arm and 6% of patients in the placebo arm.[15]

Highlights in melanoma

MEK inhibitor selumetinib is the first effective drug for advanced uveal melanoma

Final analysis of data from a phase II cross-over study in patients with metastatic uveal melanoma show that selumetinib results in tumour shrinkage in half of all patients treated and a duration of disease control more than twice that achieved with temozolomide. Patients were randomised between selumetinib (N=48) or temozolomide (N=50). Fifty percent of patients experienced tumour shrinkage, with 15% achieving major tumour shrinkage in the selumetinib group. Not a single patient achieved significant tumour shrinkage in the temozolomide group.[16] The median PFS was 15.9 weeks in the selumetinib arm versus 7 weeks in the temozolomide arm. No detrimental effects of selumetinib were observed in terms of OS, with a median survival of 10.8 months in the selumetinib arm and 9.4 months in the temozolomide arm.[16] This represents the first real advance for these patients.

Anti-PD-1 drug nivolumab shows high and durable clinical activity advanced melanoma

In a study presented by *Sznol et al.*, 107 heavily pretreated patients with advanced melanoma were treated with five different doses of the anti-PD1 drug nivolumab. Overall, 33 out of 107 (31%) of patients experienced tumour shrinkage of at least 30% and responses were seen at all doses. The estimate for survival at two years was 43%. The median OS across all doses was 16.8 months and 20.3 months for the dose chosen for study in subsequent clinical trials.[17] While this is an early-phase study, and while the results cannot be directly compared to those with other drugs, the results are striking given the historical response rates to immunotherapy drugs in advanced melanoma of 5 to 10%.

Adding GM-CSF to ipilimumab significantly improves survival in metastatic melanoma

In the study at hand, 245 patients with metastatic melanoma, who received no more than one prior treatment, were randomised between ipilimumab (10 mg/kg q3w × 4 then every 12 weeks) plus GM-CSF (250μg SC on days 1-14 of 21d cycles) or ipilimumab alone. Of note, the ipilimumab dose used in this study differs from the currently approved 3mg/kg dose. At a median follow-up of 13.3 months, tumour shrinkage rates were comparable in both arms (11.3% versus14.7%). One-year OS for ipilimumab plus GM-CSF was 68.9% versus 52.9% for ipilimumab alone (p=0.014).[18] The median OS with ipilimumab alone was 12.7 months versus 17.5 months with the combination. Moreover, the combination treatment with GM-CSF and ipilimumab was associated with fewer serious side-effects compared to ipilimumab alone.[18]

Highlights in central nervous system tumours

No benefit from bevacizumab in glioblastoma

The phase III RTOG 0825 study randomised 637 patients with newly diagnosed glioblastoma to CRT combined with temozolomide and placebo (standard of care) or CRT combined with temozolomide and bevacizumab. Prior to randomisation all patients received three weeks of CRT therapy. Following study treatment, patients continued to receive temozolomide for twelve cycles and placebo or bevacizumab every two weeks. After a median follow-up of 20.5 months, median OS was 15.7 months for patients receiving bevacizumab plus standard of care compared with 16.1 months for patients receiving only standard therapy (HR[95%CI]: 1.13[0.93, 1.37]; p=0.21). PFS was longer for patients receiving bevacizumab, as compared to patients who only received standard of care (10.7 versus 7.3 months, HR[95%CI]: 0.79[0.66, 0.94]; p=0.007).[19] Overall, adverse events typically seen with bevacizumab were also higher for patients receiving it as first-line therapy with respect to hypertension, deep vein thrombosis/pulmonary embolism, wound issues, gastrointestinal perforations, and significant hemorrhagic events.[19] As such, these results do not support the use of bevacizumab for newly diagnosed glioblastoma.

Highlights in thyroid cancer

Benefit with sorafenib in refractory differentiated thyroid cancer

The DECISION trial randomised 417 patients with locally advanced or metastatic radioactive iodine (RAI)-refractory differentiated thyroid cancer (DTC) to sorafenib (400mg twice daily) or placebo. The study met its pri-

mary endpoint of PFS, with a statistically significant HR of 0.587. Data for OS not yet mature. A partial response was seen in 12.2% of patients in the sorafenib arm and 0.5% in the placebo arm, with a median duration of response of 10.2 months. Sorafenib reduced target laesion size in 73% of patients, compared to 27% in the placebo arm.20 The most frequent AEs were hand and foot skin reactions, diarrhea, alopecia, rash, fatigue, and hypertension. Dose modification due to AEs was more common with sorafenib (77.8%) than placebo (30.1%), and 18.8% of patients discontinued sorafenib due to AEs compared to 3.8% of patients receiving placebo.[20]

References

1. F. Barlesi, H. Blons, M. Beau-Faller et al. Biomarkers (BM) France: Results of routine EGFR, HER2, KRAS, BRAF, PI3KCA mutations detection and EML4-ALK gene fusion assessment on the first 10,000 non-small cell lung cancer (NSCLC) patients (pts). J Clin Oncol 31, 2013 (suppl; abstr 8000).

2. Y. Okano, M. Ando, K. Asami et al. Randomized phase III trial of erlotinib (E) versus docetaxel (D) as second- or third-line therapy in patients with advanced non-small cell lung cancer (NSCLC) who have wild-type or mutant epidermal growth factor receptor (EGFR): Docetaxel and Erlotinib Lung Cancer Trial (DELTA). J Clin Oncol 31, 2013 (suppl; abstr 8006).

3. S. Ramalingam, P. Goss, A. Andric et al. A randomized study of ganetespib, a heat shock protein 90 inhibitor, in combination with docetaxel versus docetaxel alone for second-line therapy of lung adenocarcinoma (GALAXY-1). J Clin Oncol 31, 2013 (suppl; abstr CRA8007).

4. D. Von Hoff, T. Ervin, F. Arena et al. Results of a randomized phase III trial (MPACT) of weekly nab-paclitaxel plus gemcitabine versus gemcitabine alone for patients with metastatic adenocarcinoma of the pancreas with PET and CA19-9 correlates. J Clin Oncol 31, 2013 (suppl; abstr 4005^).

5. M. Koopman, L. Simkens, A. ten Tije et al. Maintenance treatment with capecitabine and bevacizumab versus observation after induction treatment with chemotherapy and bevacizumab in metastatic colorectal cancer (mCRC): The phase III CAIRO3 study of the Dutch Colorectal Cancer Group (DCCG). J Clin Oncol 31, 2013 (suppl; abstr 3502).

6. J. Primrose, S. Falk, M. Finch-Jones et al. A randomized clinical trial of chemotherapy compared to chemotherapy in combination with cetuximab in k-RAS wild-type patients with operable metastases from colorectal cancer: The new EPOC study. J Clin Oncol 31, 2013 (suppl; abstr 3504).

7. V. Heinemann, L. Fischer von Weikersthal, T. Decker et al. Randomized comparison of FOLFIRI plus cetuximab versus FOLFIRI plus bevacizumab as first-line treatment of KRAS wild-type metastatic colorectal cancer: German AIO study KRK-0306 (FIRE-3). Randomized comparison of FOLFIRI plus cetuximab versus FOLFIRI plus bevacizumab as first-line treatment of KRAS wild-type metastatic colorectal cancer: German AIO study KRK-0306 (FIRE-3). J Clin Oncol 31, 2013 (suppl; abstr 3506).

8. R. Motzer, C. Barrios, T. Kim TM et al. Record-3: Phase II randomized trial comparing sequential first-line everolimus (EVE) and second-line sunitinib (SUN) versus first-line SUN and second-line EVE in patients with metastatic renal cell carcinoma (mRCC). J Clin Oncol 31, 2013 (suppl; abstr 4504).

9. K. Fizazi, L. Pagliaro, A. Flechon et al. A phase III trial of personalized chemotherapy based on serum tumor marker decline in poor-prognosis germ-cell tumors: Results of GETUG 13. J Clin Oncol 31, 2013 (suppl; abstr LBA4500).

10. R. Gray, D. Rea, K. Handley et al. aTTom: Long-term effects of continuing adjuvant tamoxifen to 10 years versus stopping at 5 years in 6,953 women with early breast cancer. J Clin Oncol 31, 2013 (suppl; abstr 5).

11. E. Rutgers. Radiotherapy or surgery of the axilla after a positive sentinel node in breast cancer patients: Final analysis of the EORTC AMAROS trial (10981/22023). J Clin Oncol 31, 2013 (suppl; abstr LBA1001).

12. G. Budd. S0221: Comparison of two schedules of paclitaxel as adjuvant therapy for breast cancer.J Clin Oncol 31, 2013 (suppl; abstr CRA1008).

13. K. Tewari, M. Sill, H. Long III et al. Incorporation of bevacizumab in the treatment of recurrent and metastatic cervical cancer: A phase III randomized trial of the Gynecologic Oncology Group. J Clin Oncol 31, 2013 (suppl; abstr 3).

14. S. Kehoe, J. Hook, M. Nankivell et al. Chemotherapy or upfront surgery for newly diagnosed advanced ovarian cancer: Results from the MRC CHORUS trial. J Clin Oncol 31, 2013 (suppl; abstr 5500).

15. A. Du Bois, A. Floquet, J. Kim et al. Randomized, double-blind, phase III trial of pazopanib versus placebo in women who have not progressed after first-line chemotherapy for advanced epithelial ovarian, fallopian tube, or primary peritoneal cancer (AEOC): Results of an international Intergroup trial (AGO-OVAR16). J Clin Oncol 31, 2013 (suppl; abstr LBA5503).

16. R. Carvajal, J. Sosman, F. Quevedo et al. Phase II study of selumetinib (sel) versus temozolomide (TMZ) in gnaq/Gna11 (Gq/11) mutant (mut) uveal melanoma (UM). J Clin Oncol 31, 2013 (suppl; abstr 9003).

17. M. Sznol, H. Kluger, S. Hodi et al. Survival and long-term follow-up of safety and response in patients (pts) with advanced melanoma (MEL) in a phase I trial of nivolumab (anti-PD-1; BMS-936558; ONO-4538). J Clin Oncol 31, 2013 (suppl; abstr 9006).

18. S. Hodi, S. Lee, D. McDermott et al. Multicenter, randomized phase II trial of GM-CSF (GM) plus ipilimumab (Ipi) versus Ipi alone in metastatic melanoma: E1608. J Clin Oncol 31, 2013 (suppl; abstr CRA9007).

19. M. Gilbert, J. Dignam, M. Won et al. RTOG 0825: Phase III double-blind placebo-controlled trial evaluating bevacizumab (Bev) in patients (Pts) with newly diagnosed glioblastoma (GBM). J Clin Oncol 31, 2013 (suppl; abstr 1).

20. M. Brose, C. Nutting, B Jarzab et al. Sorafenib in locally advanced or metastatic patients with radioactive iodine-refractory differentiated thyroid cancer: The phase III DECISION trial. J Clin Oncol 31, 2013 (suppl; abstr 4).