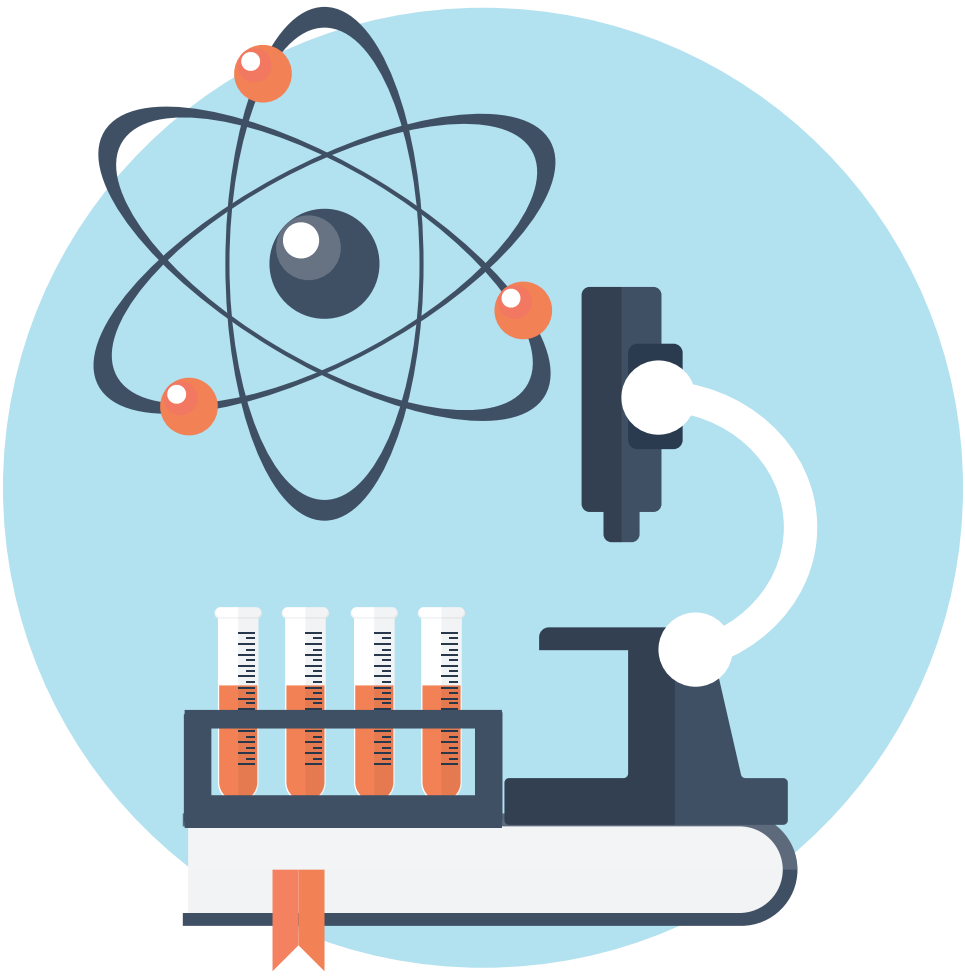
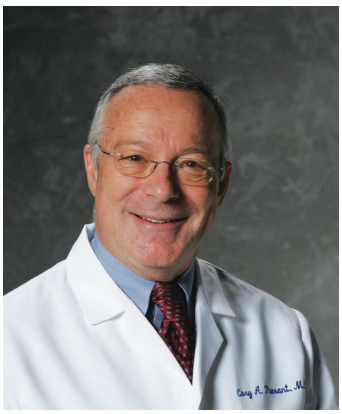


Highlights from a Virtual ASCO 2020

BY CARY A. PRESANT, MD, FACP, FASCO



How does oncology survive the cataclysmic events of 2020? Once the national emergency of COVID-19 shut down all non-essential services and meetings, researchers and clinicians wondered how the American Society of Clinical Oncology (ASCO) was going to deal with the long-awaited presentations of data necessary to improve the care of cancer patients. Once the face-to-face meeting was canceled and replaced by a virtual event, oncologists had to reset their processes of understanding the importance of new scientific discoveries without the Chicago-based meeting.

As it turned out, ASCO staff and leadership held a sensational virtual meeting that streamed on small, personal screens throughout the world. It was attended by the largest number of participants in ASCO history, up to 43,000 individuals. The presentations were impressive. Listed below are my highlights of the ASCO 2020 abstracts, which were chosen if they were a practice-changing study or trial with important new advances.

COVID-19 and Cancer Patients

- In ***Abstract LBA110***, J. Warner et al. presented the outcomes of 1,035 patients proven to have COVID-19. Of the patients, 82% had solid tumors and 22% had hematologic malignancies (some had both). The hospitalization rate was 50%, 13% of patients died, and 14% were admitted to the ICU. Among patients with progressing cancer, mortality was 25%. Among those over the age of 75, mortality was 25%. The mortality rate among patients who received hydroxychloroquine was 2.6 times higher than among patients who did not receive hydroxychloroquine (patients were not randomized in this observational study).
- In ***Abstract LBA111***, L. Horn et al. presented the TERAVOLT study of 295 lung cancer patients with COVID-19 (82% NSCLC). Of the patients, 78% were hospitalized, and mortality was 36%. HR was 1.7 for patients over 65, 1.7 for patients receiving chemotherapy, and 1.04 for patients on IO drugs.

Breast Cancer

Localized disease

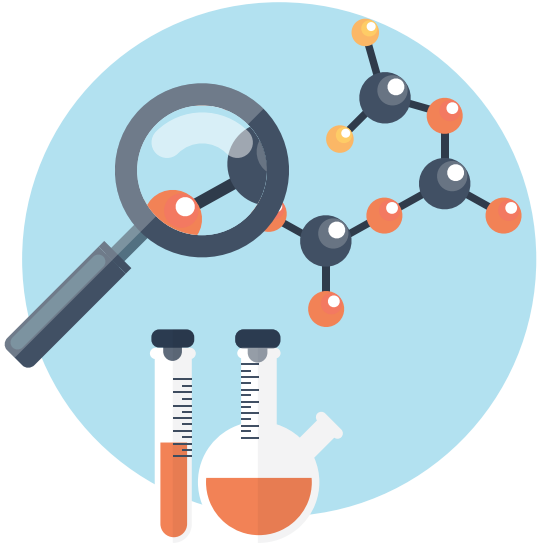
- In ***Abstract 500***, N. Harbeck et al. presented the KATLIN trial. Patients who had completed adjuvant doxorubicin plus cyclophosphamide were randomized to receive either trastuzumab plus pertuzumab plus a taxane (THP) or trastuzumab emtansine plus pertuzumab (KP). The invasive DFS was not different. However, the quality of life was inferior on THP, HR 0.71. Twenty-seven percent of patients on KP discontinued the treatment for toxicity. Cardiac toxicity occurred in 2.9% of patients with THP vs. 0.9% with KP. THP appears to remain the standard of care but with KP as an alternative for some patients.

ACRONYM LEGEND

ACP: Advanced care plans
AML: Acute myelocytic leukemia
APP: Advanced practice provider
CPS: Combined positive score
CR: Complete response
CRC: Colorectal cancer
DFS: Disease-free survival
EGFR: Epidermal growth factor receptor
EHR: Electronic health record
ELT: Early locoregional therapy
GA: Geriatric assessment
GIST: Gastrointestinal stromal tumor
HER2: Human epidermal growth factor receptor 2
HR: Hazard ratio
ICU: Intensive care unit
IO: Immuno-oncology
IS: Immediate surgery
ISCM: integrated supportive care model
MSI: Microsatellite instability
NN: nurse navigator
n.s.: Not significant
NSCLC: Non-small cell lung cancer
OS: Overall survival
PARP: Poly ADP (adenosine diphosphate)-ribose polymerase
PC: Palliative care
PD-L1: Programmed death-ligand 1
Pembro: Pembrolizumab
PFS: Progression-free survival
PR: Partial response
PTSD: Posttraumatic stress disorder
QOL: Quality of life
RCC: Renal cell cancer
RR: Response rate (CR+PR)
SOC: Standard of care
TKI: Tyrosine kinase inhibitor
TNBC: Triple-negative breast cancer
TP53: Tumor protein p53
VGPR: Very good partial response

Advanced disease

- In ***Abstract 1000***, J. Cortes et al. presented the results of Keynote 355. Patients with TNBC who were PD-L1-positive received chemotherapy (a taxane or gemcitabine plus carboplatin) with or without pembrolizumab. For all patients, PFS was 7.5 months with pembro vs. 5.6 months with placebo. For patients with higher PD-L1 (CPS >10), PFS was 9.7 months on pembro vs. 5.6 months on placebo, $p = 0.004$.
- In ***Abstract 1007***, A. Llombart-Cussac et al. presented the results of PARSIFAL. Patients received either letrozole plus palbociclib (PL) or fulvestrant plus palbociclib (PF). PFS was not different overall, but in patients who had previously failed an aromatase inhibitor, PFS was longer with PF, 27.5 months, compared to PL at 19.3 months, HR 0.86, n.s. Also, if patients had an ESR1 mutation after therapy, PFS was longer on PF, 27 months, compared to PL at 11 months, HR 2.3, $p = 0.001$.
- In ***Abstract 1005***, N. Lin et al. showed results of HER2CLIMB in patients with HER2-positive advanced disease. Adding tucatinib to trastuzumab plus capecitabine improved 12 month OS from 47% up to 71%, HR 0.58, $p = 0.005$.
- In ***Abstract LBA2***, S. Khan et al. evaluated patients with TNBC and compared ELT after 4 to 8 months of systemic therapy for metastatic disease vs. no ELT. Three-year OS was not different. Three-year locoregional recurrence was higher in patients without ELT, 25.6% vs. only 0.2% in patients with ELT, HR 0.37, $p = 0.003$. However, QOL at 18 months was worse with ELT than without ELT, $p = 0.01$, but QOL was not different at 30 months.



Cancer Prevention, Risk Reduction, and Genetics

- In ***Abstract 1500***, Z. Stadler et al. presented MSK-IMPACT. Of the 11,974 patients seen over 5 years who had an 88-gene test for germline mutations, 17.1% had pathogenic germline mutations and 7.1% had a targetable germline mutation. In BRCA1 or 2 mutation carriers, 44% received a PARP inhibitor. Of patients with Lynch syndrome and MSI-high, 66% received an IO drug.
- In ***Abstract 1506***, E. Swisher et al. presented results of MAGENTA. All patients at risk of hereditary breast-ovarian cancer watched an educational video before germline genetic testing. The authors compared actual genetic counseling pre-test vs. only post-test counseling vs. counseling pre-test and post-test. Distress at 3 months was 19% and non-inferior in all arms. Completion rate for genetic testing was higher with no pre-test counseling (88%) vs. with pre-test counseling (80%). Counseling can be reserved for patients with positive germline genetic tests.

- In ***Abstract 1507***, H. Rana et al. compared live genetic counseling with video education in patients with prostate cancer. There was no difference between live counseling vs. virtual education in receipt of testing (88% vs. 93%, respectively) and no difference in satisfaction or intent to disclose information to the family. Thirteen percent had pathogenic mutations.
- In ***Abstract 1514***, J. Weitzel et al. identified a method for avoiding false-positive tests for TP53 mutations due to aberrant clonal expression, important in properly identifying patients with Li-Fraumeni syndrome.

Cancer Care Delivery

- In ***Abstract 2000***, O. Mir et al. compared use of an NN who held weekly calls for 1 month and then every other week using a mobile application vs. SOC in patients receiving oral chemotherapy. Dose intensity was 0.93 with NN vs. 0.89 with SOC, $p = 0.04$. Hospitalization was 23% for NN patients vs. 32% for SOC, $p = 0.02$. NN showed high-value outcomes.
- In ***Abstract 2002***, L. Calvetti et al. compared home management with nurse telephone triage vs. historical controls. Hospitalization was reduced from 14.7% to 10.1%, $p = 0.002$.
- In ***Abstract 2003***, A. Lee et al. compared care before 1999 and after the Affordable Care Act of 2017 in states that expanded Medicaid (EXP) vs. states that did not. Mortality per 100,000 people was reduced more in states with EXP (65.1 down to 46.3) compared to no EXP (69.5 down to 52.3). There was less difference in African American patients compared to a greater difference in Hispanic patients.
- In ***Abstract 2006***, K. Vokinger et al. compared drug prices at drug launch in the United States vs. Europe (Germany, Switzerland, and England). Launch prices in the United States were 186% to 215% higher than in Europe. After launch, prices decreased in 86% to 90% of drugs in Europe, compared to decreases in only 19% of drugs in the United States.
- In ***Abstract 2024***, J. Kaltman et al. showed shorter median hospital length of stay (2 days) in patients with hematological malignancies or solid tumors if they had pre-hospital ISCM (including palliative care, psychiatry, psychology, interventional pain consult, social work, child life care, and distress screening) compared to having ISCM only after admission (length of stay 6 days), $p = 0.001$.

Colorectal Cancer

- In ***Abstract LBA4***, T. Andre et al. presented findings from Keynote 177 in patients with untreated metastatic CRC and MSI-high. Patients received either pembro or FOLFOX or FOLFIRI (control). PFS at 24 months was 48% for pembro vs. 19% for control, HR 0.6, $p = 0.0002$. Duration of response over 24 months was 83% with pembro vs. 35% with control.
- In ***Abstract 4000***, S. Siena et al. presented findings from the Destiny CRC01 trial. Patients with HER2-positive CRC received trastuzumab emtansine. RR was 45.3% and PFS was 6.9 months (compared to historical controls with regorafenib

(1% RR and 1.9 months PFS) or TAS102 (1.6% RR and 2.0 months PFS).

- In ***Abstract 4001***, S. Kopetz et al. presented results from BEACON CRC. Patients after one to two prior lines of treatment with a BRAF V600E mutation received triplet (encorafenib plus binimetinib plus cetuximab) vs. doublet (no binimetinib) vs. control FOLFIRI plus cetuximab (or irinotecan plus cetuximab). Median OS was 9.3 months on triplet, 9.3 months on doublet, and 5.9 months on control. HR was 0.60 vs. control.
- In ***Abstract 4002***, S. Lonardi et al. presented findings from PANDA in RAS/RAF wild-type patients over 70. PFS was similar in patients who received FOLFOX plus panitumumab (9.6 months) compared to 5FU plus panitumumab (9.1 months). Toxicity was higher with FOLFOX for neurotoxicity (3% vs. 0%), stomatitis (9.8% vs. 4.4%), and diarrhea (16.3% vs. 1.1%).
- In ***Abstract 4005***, Y. Kanemitsu et al. presented results of JCOG 0603. Patients after attempted curative resection of liver metastases from CRC received adjuvant mFOLFOX6 for 12 cycles or no therapy. Five-year DFS was 50% for FOLFOX vs. 37% for no therapy, HR 0.6, $p = 0.002$, but OS was not different.
- In ***Abstract 4018***, M. Fakih et al. presented findings from CodeBreak 100. Patients with KRAS G12C mutation were treated with the inhibitor sotorasib (AMG 510). All patients had received prior standard therapy, and 45% had received four or more prior therapies. PR was 7.1% but disease control was 76%. PFS was 4.0 months.
- In ***Abstract 4020***, A. Marabelle et al. studied patients with anal squamous cell cancer who received pembro. Seventy-three percent of patients were PD-L1-positive and 14% had CR or PR. Patients who were PDL1-negative had 3.3.% CR or PR. Duration of response was more than 24 months in 84.6%.

Gastrointestinal, Non-colorectal, and Pancreatic Cancer

- In ***Abstract 4504***, D. Sohal et al. compared patients with pancreatic cancer treated with neoadjuvant mFOLFIRINOX for six cycles vs. neoadjuvant gemcitabine plus nab-paclitaxel (GP) for nine doses. In all patients, neoadjuvant chemotherapy was followed by surgery and then post-op chemotherapy. Two-year OS was 43% for mFOLFIRINOX vs. 47% for GP. At surgery, pathologic CR or major response was seen in 25% for mFOLFIRINOX vs. 42% for GP.
- In ***Abstract 4505***, P. Ghaneh et al. compared IS for pancreatic cancer vs. neoadjuvant gemcitabine plus capecitabine followed by surgery (GC) vs. neoadjuvant FOLFIRINOX followed by surgery vs. neoadjuvant combined chemotherapy plus radiation therapy followed by surgery (CRT). Twelve-month OS was 42% for IS, 79% for GC, 84% for FOLFIRINOX, and 64% for CRT. Neoadjuvant therapy was superior to IS, HR 0.27, $p = 0.001$.

Genitourinary Cancer

Prostate cancer

- In ***Abstract 5602***, N. Shore et al. presented results from the HERO study. Patients with androgen-sensitive metastatic prostate cancer received the oral GnRH antagonist relugolix (R) or leuprolide acetate (L). Sustained castration rate was 97% for R vs. 89% for L, $p = 0.0001$. Prostate specific antigen (PSA) response at day 15 was 79% with R vs. 20% with L, $p = 0.0001$. Recovery of testosterone to over 50 mg/ml was seen in 30 days for R vs. only after 90 days for L. Major cardiac events were seen in 3.9% with R vs. 7.1% with L.

Non-prostate, renal cell cancer

- In ***Abstract 5001***, E. Plimack et al. reported data from Keynote 426. Patients with first-line advanced RCC received either pembro plus axitinib (PA) vs. sunitinib (S). Twenty-four month OS was 38.5% for PA vs. 27% for S, HR 0.68.
- In ***Abstract 5013***, S. Pal et al. reported on the combination of atezolizumab plus cabozantinib. RR was 27%, disease control was 64%, and PFS was 5.4 months.
- In ***Abstract LBA1***, T. Powles et al. reported on JAVAELIN Bladder 100 in bladder cancer patients without progression after four to six cycles of gemcitabine plus a platinum drug. OS was 24 months with maintenance avelumab vs. 14.3 months with best supportive care, HR 0.69, $p = 0.001$. In PD-L1-positive patients, 18-month survival was 70% for avelumab vs. 48% for best supportive care.
- In ***Abstract 5078***, N. Dizman et al. showed that taking probiotics before TKI therapy of RCC changed gut microbiome favorably. Patients with favorable microbiome had 92% clinical benefit vs. 50% in patients without favorable microbiome, $p = 0.036$.

Gynecologic Cancer

- In ***Abstract 6000***, A. Du Bois et al. presented data from DESKTOP1111. Patients with ovarian cancer at first relapse and eligible for disease-reducing surgery received IS and then chemotherapy or chemotherapy immediately. OS was 53.7 months for IS vs. 46.0 months for no IS, HR 0.75, $p = 0.02$.
- In ***Abstract 6002***, A. Poveda et al. presented findings from SOLO2. Patients with platinum-sensitive relapse who had responded to recent platinum therapy and who had BRCA mutation received either olaparib (O) or placebo (P). OS was 51.7 months for maintenance O vs. 38.8 months for P, HR 0.74, $p = 0.05$. At 60 months, survival was 42% for O vs. 33% for P.

Head/Neck Cancer

- In ***Abstract 6502***, N. Kiyota et al. studied patients with stage III and IV cancers with positive margins or extranodal extension after surgery. Patients receiving weekly cisplatin plus radiation therapy (Q1W) were compared to patients receiving cisplatin every 3 weeks plus radiation therapy (Q3W). Three-year OS was 72% with Q1W vs. only 59% for Q3W, HR 0.69, $p = 0.003$.

Hematologic Malignancy

Acute myelocytic leukemia

- In ***Abstract 7501***, C. Dinardo et al. compared primary therapy in patients with IDH2 mutation using enasidinib plus azacytidine (EA) vs. azacytidine alone (A). CR was achieved in 71% with EA compared to 42% with A. Event-free survival was 17.2 months with EA compared to 10.8 months with A.

Waldenstrom's macroglobulinemia

- In ***Abstract 8007***, C. Tam et al. compared zanabrutinib (Z) and ibrutinib (I) in the ASPEN trial. CR+VGPR rate was 28% for Z and 10% for I, $p = 0.09$. Atrial fibrillation occurred in only 2% on Z vs. 14% on I. Hypertension was 11% on Z vs. 16% on I. There were less pneumonia and less discontinuation on Z.

Hodgkin's disease

- In ***Abstract 8005***, J. Kuruvilla et al. presented data from Keynote 024. In patients with relapsed/refractory classic Hodgkin's disease, PFS in patients receiving pembro was 13.2 months vs. 8.3 months with brentuximab vedotin, $p = 0.003$.

Myeloma

- In ***Abstract 8506***, P. Hari et al. presented findings from the BMT CTN 0702 (STaMINA) trial. Patients who were in remission after autologous transplant (one or two transplants) with or without lenalidomide (L) plus bortezomib plus dexamethasone were randomized at 38 months to continued maintenance L or no continued L. Five-year PFS was 86% on continued L, compared to 67% without L. OS was equal.
- In ***Abstract 8501***, M. Dimopoulos et al. presented findings from the BOSTON study. Patients after one to three prior lines of therapy received bortezomib plus dexamethasone with selexinor (VDS) or without selexinor (VD). Time to next treatment was 16.1 months for VDS and only 10.8 months with VD, HR 0.66, $p = 0.001$.

Peripheral cutaneous T-cell lymphoma

- In ***Abstract 8018***, L. Li et al. reported on patients with peripheral cutaneous T-cell lymphoma treated with either gemcitabine, cisplatin, prednisone, and thalidomide (GCPT) or cyclophosphamide, doxorubicin, vincristine, and prednisone (CHOP). CR on GCPT was 42.9% vs. 27.6% on CHOP, $p = 0.049$. Four-year OS was 66.8% on GCPT vs. 53.6% on CHOP, $p = 0.039$.

Lung Cancer

Non-small cell, locoregional

- In ***Abstract LBA5***, R. Herbst et al. reported on data from the ADAURA trial. Patients with an EGFR mutation with stages IB to IIIA NSCLC after complete resection received either osimertinib (O) or placebo (P). In all patients, DFS at 36 months was 79% with O and 41% with P, HR 0.21, $p = 0.0001$. For patients with stage II or IIIA, DFS at 36 months was 80% with O and 28% for P, HR 0.17, $p = 0.0001$. OS was immature at 24 months and was 100% with O and 93% with P, but HR 0.4, n.s.

Non-small cell, metastatic

- In ***Abstract 9500***, E. Smit et al. presented results from DESTINY-Lung01. In patients with HER2 mutation or HER2 over-expression, trastuzumab deruxtecan achieved an RR of 62% and PFS of 14 months.
- In ***Abstract 9501***, M. Reck et al. presented findings from the Checkmate trial 9LA. In first-line therapy, patients received nivolumab and ipilimumab and chemotherapy (NIC), or chemotherapy alone (C). OS was 15.6 months on NIC vs. 10.9 months on C, HR 0.66.
- In ***Abstract 9507***, J. Rotow et al. presented results of combination osimertinib plus gefitinib as first-line therapy. The PR rate was 89.9%. PFS was more than 14.8 months.
- In ***Abstract 9508***, X. Wang et al. presented data from the SINDAS study. Patients with EGFR mutation and five or fewer metastases received either a tyrosine kinase inhibitor (TKI control) or the TKI plus stereotactic radiation therapy. PFS was 12.5 months for TKI vs. 20.2 months for TKI plus radiation, HR 0.62, $p = 0.001$. OS was 17.4 months for TKI and 25.5 months for TKI plus radiation, HR 0.68, $p = 0.001$.

Small cell

- In ***Abstract 9007***, B. Gronberg et al. studied patients who received chemotherapy plus radiation therapy. Patients randomized to daily radiation had an OS of 22.9 months, but patients receiving twice-daily radiation had an OS of 41.6 months, $p = 0.031$.

Mesothelioma

- In ***Abstract 9004***, M. Pagano et al. presented data from the RAMES study. In patients receiving second-line therapy, PFS was 6.2 months after gemcitabine (G) plus ramucirumab (R) vs. 3.3 months for G, HR 0.26. OS was 13.8 months with GR and 7.5 months with G, HR 0.71, p = 0.057.

Melanoma

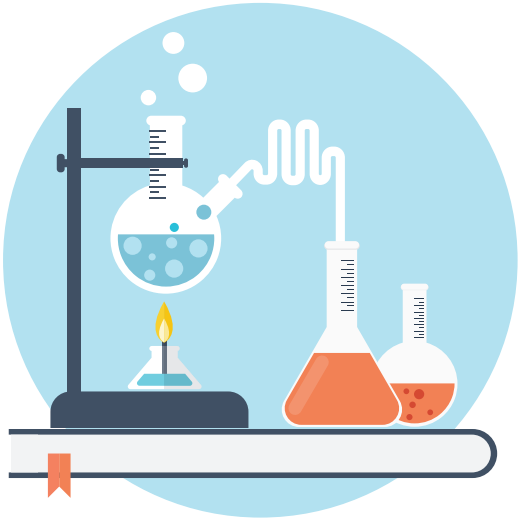
- In ***Abstract 10000***, A. Eggermont et al. presented findings from Keynote 054. Patients with stage III melanoma received either pembro or nothing. Three-year DFS was 64% on pembro vs. 44% on control, HR 0.56.
- In ***Abstract 10001***, A. Hauschild et al. studied patients with stage III melanoma who had a BRAF V600 E/K mutation. Patients receiving adjuvant dabrafenib plus trametinib had a 5-year relapse free survival of 52% vs. patents receiving placebo 38%, HR 0.51.
- In ***Abstract 10004***, D. Olson et al. studied patients failing a prior PD-L1 inhibitor but no prior CTLA4 inhibitor. They received pembro plus ipilimumab. RR was 27%, and duration of response was 18.5 months.

Sarcoma

- In ***Abstract 11503***, H. Joensuu et al. presented the long-term follow-up of the SSGXVIII/AIO trial in patients with resected GIST treated with adjuvant imatinib for 1 or 3 years. The 10-year OS was 79% with 3 years of therapy vs. 65% with 1 year of therapy, HR 0.55, $p = 0.004$.
- In ***Abstract 11508***, P. Chi et al. presented a phase II trial of binimetinib plus imatinib in patients with unresectable GIST receiving first-line therapy. PR was 68%, and eight out of nine patients became resectable.

Patient Symptoms and Survivor Care

- In ***Abstract 12000***, A. El-Jawahri et al. evaluated patients with relapsed/refractory AML. Patients received two PC evaluations per week or SOC therapy. There was less chemotherapy administered during the last 30 days of life with PC (66% vs. 35% with SOC), $p = 0.008$. There was also less anxiety, depression, and PTSD with PC, $p = 0.04$.
- In ***Abstract 12001***, T. Smith et al. evaluated patients on Phase I trials. Patients received two visits by the nurse and one visit by a physician or APP or SOC. Patients on PC had increased function ($p = 0.003$), fewer emotional problems ($p = 0.04$), and less general distress ($p = 0.01$). However, this study was performed at two sites, and the FACT-G was improved at site #1 ($p = 0.0001$) but not at site #2 ($p = 0.3$).
- In ***Abstract 12002***, C. Manz et al. studied an EHR automatic "Nudge" if patients had high predicted mortality or no APC. There were three to four times increased conversations about serious illness with physicians and two to three times increased APC after the Nudge.
- In ***Abstract 12009***, S. Mohile et al. looked at GA in patients over 70. In patients whose physician was given the results of the GA report, grade 3 to 5 toxicity was 50%, compared to 71% if physicians were not given the GA report. OS was equal.



- In ***Abstract 12010***, D. Li et al. studied GA in patients over 65. Patients who received SOC plus a GA and intervention by an APP had grade 3 to 5 toxicity in 51%, compared to 60% if patients received only SOC, $p = 0.02$. There was no difference in hospitalizations.
- In ***Abstract 12008***, P. Grimison et al. studied patients who had emesis despite SOC antiemetics following emetogenic chemotherapy. Patients who received tetrahydrocannabinol and/or cannabidiol (THC/CBD) had no further emesis (69% vs. only 57% in patients who received placebo (P)). Twenty-eight of patients after THC/CBD did not need (or were not given) rescue medications vs. only 15% of P patients who did not need rescue medications, $p = 0.03$.

How Can You Apply This Information in Your Program or Practice?

First, review all of the abstracts and published manuscripts of these studies; some are already available in the *New England Journal of Medicine*, the *Journal of the American Medical Association*, the *Journal of Clinical Oncology*, or *Lancet Oncology*. You also can search by abstract number online at meetinglibrary.asco.org. This will bring up the published abstracts with more details than this summary article. As always, remember to use your best clinical judgment, discuss these practice-changing data with colleagues, and attend virtual presentations (and in-person meetings when they resume) to help you decide which findings—when taken into consideration with individual challenges and preferences—will improve treatment for each of your patients.

Closing Thoughts

The ASCO annual meeting remains the singular most important event to learn the outcomes of the most noteworthy clinicals trials to guide cancer treatment decisions over the ensuing 12 months. Although the reports on these clinical trials are published in the *ASCO Post* or other journals, attending an annual, in-person meeting provides access to authors, discussants, critical comments, and informal chat impressions, as well as the opportunity to talk to poster authors. Attending a face-to-face meeting enhances scientific knowledge and increases professional satisfaction but at the cost of travel, time away from home and clinic, and the frustrations of navigating a meeting with more than 40,000 of your colleagues. Personally, I valued the virtual meeting of ASCO 2020 but missed the excitement and challenges of the in-person, Chicago-based meeting. So, in 2021, if the environment is safe for travel and for large, in-person meetings, I will be in Chicago along with the clinician and scientist crowds, looking for practice-changing study results and valuable conversations. But if COVID-19 remains a threat, the quality of science presented in 2020 lets me conclude that I will definitely attend the meeting's virtual counterpart. OI

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