Dr. Presant’s “Best of ASCO 2020”

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How does oncology survive the cataclysmic events of 2020? Once the national emergency of COVID 19 shut down non-essential services and meetings, researchers and clinicians wondered how ASCO was going to deal with the long awaited presentations of data necessary to improve care of cancer patients. Once the face-to-face meeting was cancelled and replaced by a virtual meeting, each oncologist had to reset their process for understanding the importance of new scientific discoveries without the Chicago meeting.

As it turned out, the staff and leadership of ASCO were able to put on a sensational virtual meeting played out on small screens throughout the world. It was attended virtually by the largest number of “attendees” now up to 43,000. And the presentations were impressive. Here are my impressions of the “Best of ASCO 2020”, chosen because of either practice changing studies or trials with important new advances.

**COVID 19 AND CANCER PATIENTS**

In abstract LBA110, J. Warner presented the outcomes of 1035 patients proven to have COVID 19. 82% had solid tumors and 22% hematologic malignancies (some had both). Hospitalization rate was 50%, and 13% died. 14% were admitted to the ICU. Among patients with progressing cancer, mortality was 25% and among those over age 75, mortality was 25%. The mortality rate among patients who received hydroxycholorquine was 2.6 times higher than among patients who did not receive hydroxychloroquine (they were not randomized in this observational study).

In abstract LBA111, L. Horn presented the TERAVOLT study of 295 lung cancer patients with COVID 19 (82% NSCLC). 78% were hospitalized, and mortality was 36%. Hazard ratio (HR) was 1.7 for patients over 65, 1.7 for patients receiving chemotherapy, and 1.04 for patients on immuno-oncology (IO) drugs.

**BREAST CANCER**

 **Localized disease**

In abstract 500, N. Harbeck 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. 27% of pts on KP discontinued the treatment for toxicity, Cardiac toxicity occurred in 2.9% of patients with THP versus 0.9% with KP. THP appears to remain the standard of care but with KP as an alternative for some patients

 **Advanced disease**

In abstract 1000, J. Cortes presented the results of Keynote 355. Patients with triple negative breast cancer (TNBC) who were PDL1 positive received chemotherapy (a taxane or gemcitabine plus carboplatin) with or without pembrolizumab. For all patients, PFS was 7.5 mo with Pembro vs 5.6 mo with placebo. For patients with higher PDL1 (CPS >10), PFS was 9.7 mo on Pembro vs 5.6 mo on placebo p=0.004.

In abstract 1007, A. Llombart-Cussak presented PARSIFAL. Patients received either letrozole plus palbociclib (Palbo) (PL)or fulvestrant plus Palbo (PF). PFS was not different overall. But in patients who had previously failed an aromatase inhibitor, PFS trended to have longer PFS with PF 27.5 mo compared to PL 19.3 mo HR 0.86 n.s. Also, if patients had an ESR1 mutation after therapy, PFS was longer on PF 27 mo, compared to PL 11 mo HR 2.3 p=0.001.

In patients with HER2 positive advanced disease, abstract 1005 by N. Lin showed results of HER2CLIMB. Adding tucatnib to trastuzumab plus capecitabine improved 12 mo OS from 47% up to 71% HR 0.58 p=0.005.

In abstract LBA2, S. Khan evaluated pts with TNBC and compared early locoregional therapy (ELT) after 4-8 mo of systemic therapy for metastatic disease, vs no ELT. 3 year OS was not different. 3 yr locoregional recurrence was higher in pts without ELT 25.6% vs only 0.2% in pts with ELT HR 0.37 p=0.003. QOL at 18 mo, however, was worse with ELT than without ELT p=0.01, but was not different at 30 mo.

**CANCER PREVENTION, RISK REDUCTION AND GENETICS**

In abstract 1500, Z. Stadler presented MSK-IMPACT. 11,974 pts over 5 yr had an 88 gene test for germline mutations. 17.1% had pathogenic germline mutations, and 7.1% had a targetable germline mutations. 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 presented MAGENTA. All patients at risk of hereditary breast-ovarian cancer had a 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 mo 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 pts with positive germline genetic tests.

In abstract 1507, H. Rana compared live genetics counseling with video education in pts 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. 13% had pathogenic mutations.

In abstract 1514 J. Weitzel identified a method for avoiding false positive tests for TP53 mutations due to aberrant clonal expression, important in properly identifying patients with Li-Fraumini syndrome.

**CANCER CARE DELIVERY**

In abstract 2000 O. Mir compared use of a nurse navigator (NN)(weekly calls for 1 month and then every other week, with a mobile application) vs standard of care (SOC) in pts receiving oral chemotherapy. Dose intensity was 0.93 with NN vs 0.89 with SOC p=0.04. Hospitalization was 23% for NN pts vs 32% for SOC p=0.02. NN showed high value outcomes.

In abstract 2002, L. Calvetti 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 compared care before (1999) and after the Affordable Care Act (ACA) (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 pts compared to a greater difference in Hispanic pts.

In abstract 2006, K. Vokinger compared drug prices at drug launch in US vs Europe (Germany, Switzerland and England). Launch prices in US were 186-215% higher than in Europe. After launch, prices decreased in 86-90% of drugs in Europe, compared to decreases in only 19% of drugs in US.

In abstract 2024 J. Koltman showed shorter median hospital length of stay (2d) in pts with hematological malignancies or solid tumors if they had pre-hospital integrated supportive care model (ISCM, including palliative care, psychiatry, psychology, interventional pain consult, social work, child life care, and distress screening) compared to having ISCM only after admission (6d) p=0.001.

**GASTROINTESTINAL MALIGNANCIES**

 **COLORECTAL CANCER (CRC)**

In abstract LBA4, A. Thierry presented Keynote 177 in pts with untreated metastatic CRC and high microsatellite instability (MSI). Pts received either Pembro or FOLFOX or FOLFIRI (control). PFS at 24 mo was 48% for Pembro vs 19% for control HR 0.6 p=0.0002. Duration of response over 24 mo was 83% with Pembro vs 35% with control.

In abstract 4000 S. Siena presented the Destiny CRC01 trial. Pts with HER2 positive CRC received trastuzumab emtansine. RR was 45.3% and PFS was 6.9 mo (compared to historical controls with regorafenib (1% RR and 1.9 mo PFS) or TAS102 (1.6% RR and 2.0 mo PFS).

In abstract 4001, S. Kopetz presented BEACON CRC. Pts after 1-2 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 mo on triplet, 9.3 mo on doublet vs 5.9 mo on control. HR was 0.60 vs control.

In abstract 4002 S. Lonardi presented PANDA in RAS/RAF wild type pts over 70. PFS was similar in pts who received FOLFOX plus panitumumab 9.6 mo compared to 5FU panitumumab 9.1 mo. 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 presented JCOG 0603. Pts after attempted curative resection of liver metastases from CRC received adjuvant mFOLFOX6 for 12 cycles or no therapy. 5 yr DFS was 50% for FOLFOX v s 37% for no therapy HR 0.6 p=0.002, but OS was not different.

In abstract 4018, M. Fakih presented CodeBreak 100. Pts with KRAS G12C mutation were treated with the inhibitor sotorasib (AMG 510). All pts had received prior standard therapy, and 45% had received 4 or more prior therapies. PR was 7.1% but disease control was 76%. PFS was 4.0 mo.

In abstract 4020 A. Marabelle studied pts with anal squamous cell cancer who received Pembro. 73% of pts were PDL1 positive and had CR or PR in 14%. Pts who were PDL1 negative had CR or PR in 3.3%. Duration of response was over 24 mo in 84.6%.

 **NON-COLORECTAL AND PANCREATIC CANCER**

In abstract 4504 D. Sokal compared pts with pancreatic cancer treated with neoadjuvant mFOLFIRINOX for 6 cycles, vs neoadjuvant gemcitabine plus nab-paclitaxel (GP) for 9 doses. In all pts, neoadjuvant chemotherapy was followed by surgery and then post-op chemotherapy. 2 yr OS was 43% for mFOLFIRINOX vs 47% for GP. At surgery, pathologic CR or major response was seen in 25% for mFOLFINIOX vs 42% for GP.

In abstract 4505, P. Ghaneh compared immediate surgery for pancreatic cancer (IS) 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). 12 mo OS was 42% for IS, 79% for GC, 84% for FOLFIRINOX vs 64% for CRT. Neoadjuvant therapy was superior to IS HR 0.27 p=0.001.

**GENITOURINARY CANCER**

 **PROSTATE**

In abstract 5602, N. Shore presented the HERO study. Pts 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. 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 d for R vs only after 90 d for L. Major cardiac events were seen in 3.9% with R vs 7.1% with L.

 **NON-PROSTATE, RENAL CELL CANCER (RCC)**

In abstract 5001, E. Plimack reoorted Keynote 426. Pts with first line advanced RCC received either Pembro plus axitnib (PA) vs sunitnib (S). 24 mo OS was 38.5 % for PA vs 27% for S, HR 0.68.

In abstract 5013, S. Pal reported on the combination of atezolizumab plus cabozantinib. RR was 27%, disease control was 64% and PFS was 5.4 mo.

In abstract LBA1, T. Powles reported on JAVAELIN Bladder 100, in bladder cancer pts without progression after 4-6 cycles of gemcitabine plus a platinum drug. OS was 24 mo with maintenance avelumab vs 14.3 mo with best supportive care HR 0.69 p=0.001. In PDL1 positive pts, 18 mo survival was 70% for avelumab vs 48% for best supportive care.

In abstract 5078 N Dizman showed that taking probiotics before TKI therapy of RCC changed gut microbiome favorably. Pts with favorable microbiome had 92% clinical benefit vs 50% in pts without favorable microbiome p=0.036.

**GYNECOLOGIC CANCER**

In abstract 6000, A. DuBois presented DESKTOP1111. Ovarian cancer patients at first relapse and eligible for disease reducing surgery received immediate surgery (IS) and then chemotherapy, or chemotherapy immediately. OS was 53.7 mo for IS vs 46.0 mo for no IS, HR 0.75 p=0.02.

In abstract 8002, A. Poveda presented 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 mo for maintenance O vs 38.8 mo for P, HR 0.74 p=0.05. At 60 mo, survival was 42% for O vs 33% for P.

**HEAD/NECK CANCER**

In abstract 6502, N. Kiyota studied pts with stages III and IV cancer with positive margins or extranodal extension after surgery. Pts receiving weekly cisplatin plus radiation therapy (Q1W) were compared to pts receiving cisplatin every 3 weeks plus radiation therapy (Q3W). 3 yr OS was 72% with Q1W vs only 59% for Q3W, HR 0.69, p=0.003.

**HEMATOLOGIC MALIGNANCIES**

 **LEUKEMIA, MYELODYSPLASTIC SYNDROME. LYMPHOMA**

 **AML**

In abstract 7501 C. Dinardo compared primary therapy in pts 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 mo with EZ compared to 10.8 mo with A.

 **WALDENSTROM’S MACROGLOBULINEMIA**

In abstract 8007, C. Tam in the trial ASPEN compared zanabrutinib (Z) and ibrutinib (I). CR and very good PR rate was 28% for Z and 10% for I p=0.09. But 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 (HD)**

In abstract 8005, J. Kurubilla presented Kenote 024. In pts with relapsed/refractory classic HD, PFS in pts receiving Pembro was 13.2 mo vs 8.3 mo with brentuximab vedotin p=0.003.

 **MYELOMA**

In abstract 8506, P. Hariu presented the BMT CTN 0702 (STaMINA) trial. Pts who were in remission after autologuous transplant (1 or 2 transplants) with or without lenalinomide (L) plus bortezomid plus dexamethosone were randomized at 38 mo to continued maintenance L or no continued L. 5 yr PFS was 86% on continued L, compared to 67% without L. OS was equal.

In abstract 8501, M. Dimopoulos resented the BOSTON study. Pts after 1-3 prior lines of therapy received bortezomid plus dexamethosone with selexin (VS) or without selexin (V). Time to next treatment was 16.1 mo for VS and only 10.8 mo with V, HR 0.66 p=0.001.

 **PERIPHERAL CUTANEOUS T-CELL LYMPHOMA (PTCL)**

In abstract 8018 L. Li reported on pts with PTCL 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. 4 yr OS was 66.8% on GCPT vs 53.6% on CHOP p=0.039.

**LUNG CANCER**

 **NON-SMALL CELL LUNG CANCER** **(NSCLC) LOCOREGIONAL**

In abstract LBA5, R. Herbst reported the ADAURA trial. Pts with stages IB to IIIA NSCLC after complete resection with an EGFR mutation received either osimertinib (O) or placebo (P). In all pts, DFS at 36 mo was 79% with O and 41% with P, HR 0.21 p=0.0001. For pts with stage II or IIIA, DFS at 36 mo was 80% with O and 28% for P, HR 0.17 p=0.0001. OS was immature at 24mo, and was 100% with O and 93% with P, but HR 0.4 n.s.

 **NON-SMALL CELL LUNG CANCER** **(NSCLC) LMETASTATIC**

In abstract 9501, M. Reck presented Checkmate trial 9LA. For first line therapy, pts received nivolumab and ipilimumab and chemotherapy (NIC), or chemotherapy alone (C). OS was 15.6 mo on NIC vs 10.9 mo on C HR 0.66.

In abstract 9504, E. Smit presented DESTINY-Lung01. In pts with HER2 mutation or HER2 over-expression, trastuzumab deretuxan achieved RR 62% and PFS 14 mo.

In abstract 9507, J. Rotow presented results of combination osimertinib plus gefitinib as first line therapy. PR rate was 89.9%. PFS was over 14.8 mo.

In abstract 9508, X. Wang presented the SINDAS study. Pts with EGFR mutation and 5 or fewer metastases received either a tyrosine kinase inhibitor (TKI control), or the TKI plus stereotactic radiation therapy. PFS was 12.5 mo for TKI vs 20.2 mo for TKI plus radiation HR 0.62 p=0.001. OS was 17.4 mo for TKI and 25.5 mo for TKI plus radiation HR 0.68 p=0.001.

 **SMALL CELL LUNG CANCER (SCLC)**

In abstract 9007, B. Gronberg studied pts who received chemotherapy plus radiation therapy. Pts randomized to daily radiation had an OS of 22.9 mo, but pts receiving twice daily radiation had an OS of 41.6 mo p=0.031.

 **MESOTHELIOMA**

In abstract 9004, M. Pagano presented the RAMES study. In pts receiving second line therapy, PFS was 6.2 mo after gemcitabine (G) plus ramicirumab (R), vs 3.3 mo for G, HR 0.26. OS was 13.8 mo with GR and 7.5 mo with G, HR 0.71 p=0.057.

**MELANOMA**

In abstract 10000 A. Eggermont presented Keynote 054. Pts with stage III melanoma received either Pembro or nothing. 3 yr DFFS was 64% on Pembro, vs 44% on control HR 0.56.

In abstract 10001, A. Hauschild studied pts with stage III melanoma who had a BRAF V600 E/K mutation. Pts receiving adjuvant dabrafenib plus trimetanib had a 5 yr RFS of 52% vs pts with placebo 38%, HR 0.51.

In abstract 10004, D. Olson studied pts failing a prior PDL1 inhibitor but no CTLA4 inhibitor. They received Pembro plus ipilimumab. RR was 27%, and duration of response was 18.5 mo.

**SARCOMA**

In abstract 11503, H. Joensuu presented the long term follow up of the SSGXVIII/AIO trial in resected GIST pts, treated with adjuvant imatinib for 1 or 3 years. The 10 yr OS was 79% with 3 yr vs 65% with 1 yr, HR 0.55, p=0.004.

In abstract 1508, P. Chi presented a phase II trial of binimetinib plus imatinib in pts with unresectable GIST receiving first line therapy. PR was 68%, and 8/9 pts became resectable.

**PATIENT SYMPTOMS AND SURVIVOR CARE**

In abstract 12000, A. El-Jawahjri evaluated pts with relapsed/refractory AML. Pts received 2 palliative care (PC) evaluations per week or standard of care therapy (SOC). There was less chemotherapy administered during the last 30 d of life with PC 66% vs 35% with SOC p=0.008. There were also less anxiety, depression and PTSD p=0.04.

In abstract 12001, T. Smith evaluated pts on phase I trials. Pts received 2 visits by the nurse and 1 visit by PC physician or advanced practice provider(APP) (PC), or SOC. Pts on PC had increased function p=0.003, fewer emotional problems p=0.04, and less general distress p=0.01. However, this was performed at 2 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 studied an electronic medical record automatic “Nudge” if pts had high predicted mortality or no advanced care plans (APC). There were 3-4 times increased conversations about serious illness with physicians and 2-3 times increased APC after the Nudge.

In abstract 12009 S. Mohile studied geriatric assessments (GA) in pts over 70. In pts who received the GA report, grade 3-5 toxicity was 50%, compared to 71% if pts were not given the GA report. OS was equal.

In abstract 12010 D. Li studied GA in pts over 65. Pts who received SOC plus a GA and intervention by an APP had grade 3-5 toxicity in 51%, compared to 60% if pts received only SOC p=0.02. There was no difference in hospitalizations.

In abstract 12008 P. Grimson studied pts who had emesis despite SOC antiemetics following emetogenic chemotherapy. Pts who received tetrahydrocannabinol and/or cannabidiol (THC/CBD) had no further emesis in 69%, vs only 57% in pets who received placebo (P). Rescue medications were not needed or given in 28% of pts after THC/CBD versus not needed or given in only 15% of P pts p=0.03.

**HOW CAN YOU APPLY THIS INFORMATION IN YOUR CENTER**

It is a necessity to review the abstract and published manuscripts of these studies (some are already available in the New England Journal of Medicine, JAMA, JCO or Lancet Oncology). Also, you can follow this link to <https://meetinglibrary.asco.org> and type in the abstract number and then search. This will bring up the published abstract with all the details that I cannot recite in this summary article. Then use your best judgment, discuss with colleagues, and attend virtual presentations (or even in person meetings when they resume). You can decide which results are best for each of your patients considering their personal challenges.

**CONCLUSIONS**

The annual meeting of ASCO remains the singular most important time to learn the outcomes of most important trials that guide cancer treatments over the ensuing 12 months. Although the reports on the best clinical trials are presented as well at “Best of ASCO” meetings, or published in the ASCO POST or other journals, attending an annual face-to-face meeting provides access to discussant critical comments and informal chat impressions, as well as being able to talk to the authors at posters and poster discussion sessions. Attending a face-to-face meeting enhances scientific knowledge and increases professional satisfaction, but at the cost of travel, time away from home, and the frustrations of navigating a meeting with over 40,000 of your colleagues. For me personally, I valued the virtual meeting of ASCO 2020, but missed the excitement and challenges of the face-to-face Chicago meeting.

So in 2021, if the environment is safe for oncologists of my age, 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 makes me conclude that I will definitely attend virtual meeting.

Abbreviations Used in this Article

Note: only the first author is listed

CA cancer

Pt patient

CT chemotherapy

RT radiation therapy

RFA radio-frequency ablation

IT immunotherapy

OS overall survival

PFS progression free survival

DFS Disease free survival

CR complete response

PR partial response

SD stable disease

CR complete response

PR partial response

CBR clinical benefit rate (CR+PR+SD)

pCR pathological complete response

RR response rate (CR+PR)

QOL quality of life

IO immuno-oncology

TMB tumor mutational burden

MSI microsatellite instability

MMR mismatch repair

pMMR proficient MMR

dMMR deficient MMR

MRD minimal residual disease

Vs versus

Mo months

Yr years

LBA late breaking abstract

NCCN National Comprehensive Cancer Network

ASCO American Society of Clinical Oncology

ESMO European Society of Medical Oncology

ACCC Association of Community Cancer Centers

OCM Oncology Care Model

NCDB national cancer data base

AML acute myelocytic leukemia

ALL acute lymphocytic leukemia

NHL non Hodgkin’s lymphoma

iNHL indolent non-Hodgkin’s lymphoma

NSCLC non-small cell lung cancer

SCLC small cell lung cancer

HNSCC head and neck squamous cell cancer

TNBC triple negative breast cancer

CNS central nervous system

ADT androgen depletion therapy

R/R relapsed/refractory

CRS cytokine release syndrome

EMR electronic medical record

ABX antibiotic

MB microbiome

EGFR epidermal growth factor receptor

ADT androgen deprivation therapy

R-CHOP rituximab, cyclophosphamide, doxorubicin, vincristine plus prednisone

R-CVP rituximab, cyclophosphamide, vincristine plus prednisone

GE gastro-esophageal

Bev bevacizumab

Cet cetuximab

VD vitamin D

Vel velparib

Pembro pembrolizumab

Nivo nivolimumab

Ipi ipilimumab

GA geriatric assessment

HR hazard ratio

ns not significant

AI artificial intelligence