Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

1559O Efficacy and toxicity of BNT162b2 vaccine in cancer patients

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Background: Efficacy and safety profile of COVID-19 vaccines had been acquired from phase III studies. Nevertheless, cancer patients were not represented in these trials. In 1/2021 mass vaccination of high-risk population, including cancer patients, was initiated in Israel. We aimed to prospectively evaluate efficacy, immunogenicity and safety of BNT162b2 vaccine in cancer patients.

Methods: Cancer patients on active treatment were prospectively enrolled following first dose of BNT162b2 or after a second dose. Serum was collected after each dose and additionally in case of seronegativity. An age-matched cohort of healthcare workers served as controls. Questionnaires regarding sociodemographics and adverse reactions were employed at serum collection. FDA-approved assay was used to assess IgG at all time-points. Patients' electronic medical records were reviewed for documentation of COVID-19 infection, blood counts, liver enzymes and imaging studies.

Results: The study included 232 cancer patients and 261 controls. Following first dose 29% of patients were seropositive compared with 84% of controls ($p<0.001$). Following second dose seropositive rate reached 86%. Rate per 1000-person days after first dose were 12.5 for patients and 48.5 for controls. Chemotherapy reduced immunogenicity (OR 0.41 (95%CI 0.17-0.98). In seronegative patients, rate of documented leukopenia reached 39%. No COVID19 cases were documented throughout the study period except two cases following the first dose. Reported adverse events resembled former published studies.

Conclusions: Our results indicate the BNT162b2 appear to be safe and effective in cancer patients. There is a pronounced lag in antibody production compared with non-cancer controls, however seroconversion occurred in most patients after the second dose. Future real-world data is warranted to determine the long-term efficacy of the vaccine with regard to type of anti-cancer treatment.

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1560O Prevalence and impact of COVID-19 sequelae on treatment pathways and survival of cancer patients who recovered from SARS-CoV-2 infection

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Background: The long-term impact of COVID-19 in cancer patients (pts) is undefined.

Methods: Among 2795 consecutive pts with COVID-19 and cancer registered to OnCovid between 01/2020 and 02/2021, we examined clinical outcomes of pts reassessed post COVID-19 recovery.

Results: Among 1557 COVID-19 survivors, 234 (15%) reported sequelae including respiratory symptoms (49.6%), fatigue (41%) and cognitive/psychological dysfunction (4.3%). Persisting COVID-19 sequelae were more likely found in males ($p=0.0407$) aged $\geq$65 years ($p=0.0489$) with $\geq$2 comorbidities ($p=0.0006$) and positive smoking history ($p=0.0004$). Sequelae were associated with history of prior hospitalisation ($p<0.0001$), complicated disease ($p<0.0001$) and COVID-19 therapy ($p=0.0002$). With a median post-COVID-19 follow up of 128 days (95%CI 113-148), multivariable analysis of survival revealed COVID-19 sequelae to be associated with an increased risk of death (HR 1.76, 95%CI 1.16-2.66) after adjusting for sex, age, comorbidities, tumour characteristics, anticancer therapy and COVID-19 severity. Out of 473 patients who were on systemic anticancer therapy (SACT) at COVID-19 diagnosis; 62 (13.1%) permanently discontinued therapy and 75 (15.8%) received SACT adjustments, respectively. Discontinuations were due to worsening performance status (45.1%), disease progression (16.1%) and residual organ disfunction (6.3%). SACT adjustments were pursued to avoid hospital attendance (40%), prevent immunosuppression (57.3%) or adverse events (20.3%). Multivariable analyses showed permanent discontinuation to be associated with an increased risk of death (HR 4.2, 95%CI: 1.62-10.7), whereas SACT adjustments did not adversely affect survival.

Conclusions: Sequelae post-COVID-19 affect up to 15% of patients with cancer and adversely influence survival and oncological outcomes after recovery. SACT adjustments can be safely pursued to preserve oncological outcomes in patients who remain eligible to treatment.

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1561O The future of the oncology workforce since COVID-19: Results of the ESMO Resilience Task Force survey series

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Background: The ESMO Resilience Task Force has investigated wellbeing since COVID-19 in relation to work, lifestyle and support factors in oncology professionals globally. We reported on the significant impact of the initial surge of the pandemic on wellbeing and job performance (Banerjee *et al.* 2021). As the pandemic continues, it is imperative to understand experiences and concerns to better inform support measures for the oncology workforce.

Methods: Three anonymous online surveys were conducted during the COVID-19 pandemic (S1, Apr/May 2020; S2, Jul/Aug 2020; S3, Feb/Mar 2021). Longitudinal analysis of responses at these timepoints were conducted. Here, we present responses to questions on job demands and resources, and perceived job performance since COVID-19 (JP-CV).

Results: We analysed 3894 individual responses (S1, n=1520; S2, n=942; S3, n=1432): 53% (n=1961/3731) female, 45% (n=1679/3731) =/<40 years, 31% (n=1132/3692) non-white ethnicity, >100 countries. There has been significant increases from S1 to S3 ($p<0.001$) in feeling overwhelmed with workload (29% vs 45%); COVID-19-related clinical (14% vs 58%) and research (16% vs 64%) work; out-of-hours work (16% vs 41%), shift work (12% vs 26%) and overall working hours (17% vs 47%); and inadequate time for personal/family life (35% vs 45%). 59% (n=1156/1946) were

unable to take allocated annual leave. While JP-CV has improved (34% vs 49%, p<0.001), there remained concerns about the negative impact of the pandemic on career development/training (43%), job security (37%) and international fellowship opportunities (76%). Overall, less than half had felt supported by their work management, professional societies or government, and/or had access to wellbeing support services. 25% (n=266/1086) were considering changing their future career with 38% (n=100/266) contemplating leaving the profession.

Conclusions: Since COVID-19, oncology professionals have reported increased job demands, concerns over career development/training and job security, and inadequate time for personal life. There is a real threat of potential attrition in the current workforce. National and international stakeholders must act together to ensure robust recovery plans as we emerge from the COVID-19 crisis.

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1562MO Effectiveness of COVID-19 vaccination in cancer patients: A nationwide Veterans Affairs study

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Background: Data is lacking about SARS-CoV-2 vaccination effectiveness in patients with cancer, particularly those on systemic therapy. This retrospective cohort study in the US national Veterans Affairs (VA) healthcare system reports the effectiveness of SARS-CoV-2 vaccination in cancer patients on and off active therapy during the first 140 days following administration.

Methods: This is a multicenter study of SARS-CoV-2 infection among vaccinated and unvaccinated Veterans vaccinated during the period from 12/15/2020 to 5/4/2021. Veterans with solid or hematologic malignancy who received systemic cancer-directed therapy at the VA at least one time between 8/15/2010 to 5/4/2021 were included. Vaccinated patients were exactly matched 1:1 to an unvaccinated control on race, VA facility, rurality of home address, cancer type, and treatment timing and modality with minimum distance matching on age. The primary exposure was receipt of a SARS-CoV-2 vaccine. The primary outcome was laboratory-confirmed SARS-CoV-2 infection. Vaccination effectiveness was defined as 1 minus the risk ratio of SARS-CoV-2 infection for vaccinated individuals compared to unvaccinated controls.

Results: 184,485 patients met eligibility criteria and 113,796 were vaccinated during the study period. Of these, 29,152 vaccinated patients were matched 1:1 to 29,152 unvaccinated or not yet vaccinated controls. As of a median 47 days of follow-up, overall vaccine effectiveness in the matched cohort was 58% (95% CI, 39 to 72%) starting 14 days after the second dose. Patients on chemotherapy within three months prior to first vaccination dose exhibited a 14-day post-second dose effectiveness of 57% (95% CI -23 to 90%), versus 76% (95% CI 50 to 91%) for those on endocrine therapy and 85% (95% CI 29 to 100%) for those off systemic therapy for at least six months prior.

Conclusions: Vaccination is an effective strategy for preventing COVID-19 in cancer patients. However, effectiveness may be reduced in patients actively receiving immunosuppressive systemic therapy. Future study is needed to determine if these patients would benefit from post-vaccination serologies and/or a booster vaccination following completion of therapy.

Legal entity responsible for the study: Nathanael Fillmore.

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1563MO CoVigi phase IV multicentric trial evaluating COVID-19 vaccination adverse events and immune response dynamics in cancer patients: First results on antibody and cellular immunity

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Background: SARS-CoV-2 infection may be a threat for those undergoing active anticancer therapy. We aim to study adverse events, efficacy, and immune response in Covid-19 vaccinated patients focusing on possibly interfering therapy.

Methods: CoVigi is a prospective open-label multicentric phase 4 clinical study (EudraCT 2021-000566-14) enrolling patients on anti-cancer treatment. Vaccines from Pfizer-BioNTech, AstraZeneca, Johnson&Johnson, or Moderna are considered. Data on vaccination side effects, the onset and course of Covid-19, and quantitative analysis of anti-S and anti-N SARS-CoV-2 antibodies (Roche) and SARS-CoV-2 specific cellular response evaluated by IFN-gamma-release assay (Qiagen) and CD69 expression are recorded as follows: at the baseline (prior to the vaccination), prior to the 2nd dose, 4–8 weeks, 3, 6 and 12 months after the first dose.

Results: The trial was initiated on March 22th. As of May 4th, 152 solid cancer and 103 hematooncology patients were enrolled. From preliminary baseline data, 22% of solid cancer and 29% of hematooncology patients had detectable levels of anti-S antibodies with a median of 106 U/ml (range 1.4–3666) and 84 U/ml (range 0.75–2528), respectively ($p = 0.888$). Surprisingly, only 44% solid cancer and 53% of hematooncology patients with detectable antibodies prior to the vaccination referred on covid-19 in medical history. In the Ab-positive cohort, the IFN-gamma level upon both CD4 and CD8 stimulation was 0.04 pg/ml (IQR 0.02–0.13), the CD69 expression on NKT-like cells increased to 10.9% (IQR 6.6–17.3), whereas in the Ab-negative cohort was 0.00 pg/ml (IQR 0.00–0.01 and to 7.5% (IQR 4.0–10.1), respectively ($p < 0.001$ and $p = 0.079$).

Conclusions: Substantial number of cancer patients experienced SARS-CoV-2 infection during active anti-cancer treatment prior to vaccination, often with asymptomatic course. In SARS-CoV-2-immunized patients, we observed SARS-CoV-2 positive cellular response. The preliminary results with dynamics of immune response with 3-month follow-up will be presented at the conference. Acknowledgment: CZECRIN LM2018128, Roche Diagnostics, MMCI00209805, MHCZ/DRO (FNBr, 65269705).

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