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.

on immunotherapy. Participants were mostly vaccinated with BNT162b2 (83.1% and 84.6%, respectively in patients with cancer and controls). Proportions of patients with cancer were lower to develop anti-Spike IgG (93.0 [88.1; 96.3]) *vs* 100.0 [99.6; 100.0) and neutralizing antibodies (86.4 [80.3; 91.2] *vs* 99.7 [99.1; 99.9]). Patients with cancer had lower levels of anti-Spike antibodies (877.1 [727.4; 1057.6] *vs* 1415.8 [1345.2; 1490.1] BAU/mL,) and of seroneutralization titers (126.8 [100.7; 159.7] *vs* 316.0 [294.9; 338.5] titers) than controls. Multivariable analysis on non-responders and effect of a third dose will be presented.

Conclusions: Patients with cancer had good response rates one month after two doses of COVID-19 vaccines. Nonetheless, seroneutralization titers were lower than in the control group.

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1611P Clinical determinants of SARS-CoV-2 vaccine response in adults with cancer

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Background: Adults with cancer are susceptible to severe SARS-CoV-2 disease. Emerging data show initial response to COVID-19 vaccination in most patients (pts) with solid cancer, many with haematological (haem) cancer remain vulnerable. Data beyond initial response and regarding effect of booster doses are lacking.

Methods: SerOzNET (ACTRN 12621001004853) is a prospective study of SARS-CoV-2 vaccine response in pts with cancer. Pts are recruited prior to dose 1 and receive standard of care BNT162b2 or ChadOx1-S vaccine. Blood is taken at baseline and after each dose; and analysed for neutralising antibody (Nab) titre, absolute antibody titre (spike & nucleocapsid, Abbott), T cell response and epigenetics. Demographics, diagnosis, treatment, comorbidity and toxicity data are collected. Pts are followed for up to 3 months beyond dose 5 (if eligible).

Results: 399 pts were enrolled. Median age was 58. 59% were female. 65% had solid and 35% haem cancer. 353 (89%) had primary vaccination with BNT162b2; 43 (11%) with ChadOx1-S. 203 (51%) received cytotoxic chemotherapy. 95% were ECOG 0-1. NAb results are available for 307 pts post dose 2 and 184 pts post dose 3. Post dose 2, 40% of haem pts and 87% of solid pts responded. Predictors of non-response were ChadOx1-S vaccine (OR 3 p=0.02), haem cancer (OR 14 p<0.001), ECOG ≥1 (OR 2.6 p=0.01) and steroids (OR 5 p=0.01). Age, Charlson comorbidity index, chemotherapy and time post last treatment were not predictive. Post dose 3, 70% of haem pts and 97% of solid pts responded. Only haem cancer remained a significant predictor of non-response (OR 16). Factors associated with non-response amongst haem pts were highly immunosuppressive drugs (e.g. anti CD20, anti Bcl-2), lymphoma (vs. myeloma) and steroids. T cell response (IFN-γ to spike) is available for 62 pts post dose 2 (9 haem, 53 solid). 48 (77%) had detectable response (55% of haem pts, 81% of solid pts). 27/30 (90%) of patients responded post dose 3. Analysis and follow up are ongoing.

Conclusions: An early third vaccine dose is essential to ensure adequate SARS-CoV-2 immunity in pts with cancer. It is especially important for pts with haem cancer, initial ChadOx1-S vaccine, ECOG ≥1 and pts on steroids. Longer follow up will elucidate patterns in T cell response.

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1612P Immunogenicity of two doses of inactive COVID-19 vaccine and third booster dose mRNA vaccine in patients with cancer receiving active systemic therapy

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Background: A third dose booster vaccination is currently recommended in patients with cancer who were previously vaccinated with two doses of inactive COVID-19 vaccine based on the lower efficacy of the vaccines in these patients and waning of immunity over time. However, the data is limited on the efficacy of this vaccination strategy. We aimed to evaluate the seroconversion rates after two doses of inactive COVID-19 vaccine (CoronaVac) and the benefit of a third dose mRNA vaccine booster in patients with cancer receiving active treatment.

Methods: Patients with solid tumors receiving active treatment (n=101) and patients with no cancer (n=48) as the control group were included in the study. All the patients and controls had received two doses of CoronaVac and a third booster dose of the mRNA vaccine (Bnt162b2). Anti-SARS-CoV-2 Spike Receptor Binding Domain IgG antibody levels after the 2nd and 3rd dose were measured with quantitative ELISA.

Results: The median age of the patients was 66 (IQR 60-71). 79% of the patients were receiving chemotherapy, and 21% were receiving immunotherapy at the time of vaccination. Antibody levels measured after 2 doses of CoronaVac were significantly lower in patients with cancer than in the control group [median 0 μg/ml (IQR 0-1.17 μg/ml) vs. median 0.91 μg/ml (IQR 0-2.24 μg/ml), respectively, p=0.002]. Seropositivity rates were 46.5% in patients with cancer and 72.9% in the control group (p=0.002). Antibody measurement was performed in 26 patients after the third dose. Seroconversion rate increased from 46.5% to 88.5% (p<0.001), and the antibody titers significantly increased with the third-dose booster (median 0 μg/ml (IQR 0-1.17 μg/ml) after two doses vs. 12.6 μg/ml (IQR 1.8-69.1 μg/ml) after third booster dose, p<0.001).

Conclusions: In conclusion, our study provides important data regarding the lower efficacy of CoronaVac in patients with cancer compared with controls. Additionally, we demonstrated significantly increased seroconversion rates with a third-dose booster mRNA vaccine after two doses of CoronaVac in patients with cancer for the first time in literature. Further research is needed to define the optimal vaccination schedule in patients with cancer.

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