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Original Research

The BNT162b2 mRNA COVID-19 vaccine in adolescents and young adults with cancer: A monocentric experience

Gabriel Revon-Riviere [a], Laetitia Ninove [b], Victoria Min [a], Angélique Rome [a], Carole Coze [a], Arnauld Verschuur [a], Xavier de Lamballerie [b], Nicolas André [a,c,*]

[a] *Department of Pediatric Immunology, Hematology and Oncology, Children Hospital of La Timone, AP-HM, Marseille, France*
[b] *Unité des Virus Émergents (UVE) Aix-Marseille Univ-IRD 190-Inserm 1207-IHU Méditerranée Infection), Marseille, France*
[c] *SMARTc Unit, Centre de Recherche en Cancérologie de Marseille, Inserm U1068, Aix Marseille Univ, Marseille France*

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Abstract ***Background and aims:*** COVID-19 infection in paediatric patients with cancer is severe or critical in 20% of the patients. It can therefore directly affect paediatric patients with cancer and/or their care. We aimed at evaluating the safety and efficacy of the BNT162b2 mRNA COVID-19 vaccine in adolescents and young adults (AYA) with solid tumour.
Methods: This study includes a retrospective analysis of safety and efficacy of the BNT162b2 mRNA COVID-19 vaccine administered to patients, ≥16 years old, under treatment for a solid tumour or within 6 months after treatment from 15th February 2021 to 15th April 2021. Two administrations of the vaccine 3 weeks apart were given. Sera were tested for anti-SARS-Cov-2 immunoglobulin G (IgG) antibodies directed against the S1 domain of the spike protein. In case of positive serology, neutralisation of SARS-Cov-2 was tested.
Results: Twenty-three patients with solid tumours were identified and proposed to get vaccinated. Nine patients refused, and 1 previously developed COVID-19 infection with positive serology. At the time of writing, 13 patients (10 M/2 F; median age: 17) started vaccination. All patients received 2 injections except 2 patients who stopped vaccination because of tumour progression. Ten patients were under treatment (alone or in combination: chemotherapy: 7 patients [pts], immunotherapy: 2 pts, targeted therapy: 3 pts, follow-up: 3 patients). Overall, vaccines were well tolerated. Five patients did not report any side-effects after the first injection and 4 after the second injection. The main local reactivity symptom was mild pain at the site of injection (6 and 2 pts). Fatigue (2 pts and 5 pts) was the most frequent systemic symptom. One

* *Corresponding author*: Department of Pediatric Immunology, Hematology and Oncology, Children Hospital of La Timone, AP-HM, Marseille, France.
E-mail address: Nicolas.andre@ap-hm.fr (N. André).

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