

# AB013. Tolerability of COVID-19 mRNA vaccines in patients with thymic epithelial tumors

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**Background:** Widespread adoption of vaccination against severe acute respiratory syndrome coronavirus type 2 (SARS-CoV-2), which causes COVID-19, is a crucial step towards controlling the ongoing pandemic. Messenger RNA (mRNA) vaccines currently authorized for use (BNT162b2 manufactured by Pfizer, Inc. and BioNTech, and mRNA-1273 produced by ModernaTX, Inc., MA, USA) have demonstrated safety, even in individuals with pre-existing autoimmune diseases (AD). Thymic epithelial tumors (TETs) are associated with paraneoplastic AD due to defects in immunological self-tolerance. We conducted a survey to evaluate the tolerability of COVID-19 mRNA vaccines in patients with TETs, including individuals with paraneoplastic AD.

**Methods:** After reviewing published data on adverse events (AEs) associated with the BNT162b2 and mRNA-1273 vaccines, we designed a questionnaire to assess tolerability of these vaccines in individuals with TETs. The survey consisted of 13 questions that covered vaccine-related AEs

that could be self-assessed by patients. Questions related to AD and use of immunosuppressive drugs were included. The survey was administered at three timepoints: after each dose of vaccination and one month following the final dose. Descriptive statistics were used to analyze data; results were compared with those reported from phase II/III trials of the BNT162b2 and mRNA-1273 vaccines.

**Results:** From February 26th, 2021 to June 1st, 2021, 54 patients with TETs participated in the survey [median age: 58 years; females: 26 (48%); thymoma: 33 (61%), thymic carcinoma: 20 (37%); pre-existing AD: 19 (35%); concurrent immunosuppressant use: 12 (22%)]. Common AEs included injection-site pain (57% to 90%), fatigue (21% to 65%), and headaches (16% to 26%). The frequency of muscle- and joint-symptoms was not increased in patients with TETs compared with vaccine trial participants. There were no vaccination-related hospitalizations or deaths. Autoimmune flares occurred in 3 (16%) patients after the first dose and 3 (17%) patients after the second dose. One patient (2%) was diagnosed with a new AD following vaccination.

**Conclusions:** Tolerability of COVID-19 mRNA vaccines in patients with TETs is comparable to the general population. Development or flare of autoimmunity is uncommon and manageable. Patients with TETs should be encouraged to get vaccinated against COVID-19 due to documented benefits of vaccination and manageable risks.

**Keywords:** Thymoma; thymic carcinoma; COVID-19; vaccination

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## Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

*Ethical Statement:* The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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