1239 MAJOR ADVERSE CARDIOVASCULAR EVENTS (MACE) IN PATIENTS WITH MELANOMA RECEIVING IMMUNE CHECKPOINT INHIBITORS

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Background Immune checkpoint inhibitors (ICI) can persistently augment immune and inflammatory pathways. While cardiovascular immune-related adverse events (irAE) such as myocarditis are well identified, less is known about other potential cardiovascular effects of ICI.[1] Given the association between inflammation, atherosclerosis and cardiovascular disease, it is conceivable that ICI may increase the risk of major adverse cardiovascular events (MACE). Our objective was to evaluate the risk of MACE in patients with melanoma after initiation of ICI.

Methods We conducted a before-after study of patients identified in the Optum's de-identified Clinformatics® Data Mart Database, from 2011 to 2021, who received approved ICI and had International Classification of Diseases (ICD) 9/10 claims diagnoses of melanoma. We required that patients in the cohort have a minimum of 12 months of observable data before receiving ICI therapy. We identified MACE (i.e. myocardial infarction, coronary revascularization, stroke, and heart failure with hospitalization) using ICD-9/10 codes. We compared MACE rates in the year before ICI initiation and the year after ICI, using Cox proportional hazard models with robust sandwich estimate of the covariance matrix to account for correlated outcomes in the same patient. Patients were censored at last follow-up or death. We identified patients who had myocarditis after ICI initiation to assess potential association with MACE.

Results From a cohort of 34,864 patients who received ICI we identified 4,030 patients with melanoma. Mean age was 67.4 years (SD 14.1) and 35.8% were female; 2802 (69.5%) received monotherapy, 337 (8.4%) combination immunotherapy, and 891 (22.1%) received sequential ICI therapy. One hundred and sixty (4%) patients had ³ 1 MACE before ICI and 225 (6%) after ICI, with a hazard ratio [HR] 1.77 95% confidence interval [CI] 1.47–2.13). We identified 10 patients with myocarditis after ICI initiation; 5 (50%) of the patients with myocarditis had a MACE claim compared to 220 (5%) of 4,020 without myocarditis (P<0.001).

Conclusions Our results suggest that ICI may increase the risk of MACE in patients with melanoma during the first year after ICI initiation. Additional studies are needed to evaluate the long-term effects of ICI on cardiovascular outcomes and the potential impact of other risk factors such as prior cardiovascular disease, ICI regimen, and use of other drugs such as chemotherapy or glucocorticoids.

REFERENCE

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Ethics Approval The study was approved by MD Anderson Cancer Center intuition's Ethics Board, protocol number 2022–0628

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