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Novel risk factors predictive of anti-PD1 immune checkpoint inhibitor-associated pulmonary toxicity.

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Background: Anti-PD1 Immune checkpoint inhibitors (ICI) are widely used as an effective treatment for many cancers. The most important problem that limits the effectiveness of this treatment is immune-related toxicities. In this study, we aimed to determine the incidence and risk factors of immune-related pulmonary toxicity, which has become more common with the widespread use of anti-PD1 (ICI). **Methods:** This prospective study including 126 patients over 18 years of age who were using anti-PD-1 immune checkpoint inhibitors for malignancy was conducted between April 2022 and April 2024. Sociodemographic, clinical, laboratory and radiological findings of the patients were recorded and they were followed up regularly 3- to 6-month intervals for a total of 2 years for ICI-related pulmonary toxicity. **Results:** In our study, the mean age of the patients was 62.93 ± 12.94 years and 81% were male. ICI-related pulmonary toxicity rate was 16.7% and all-cause mortality rate was 68.3%. As a result of the analysis, the conditions associated with pulmonary toxicity malignancy type (p = 0.000), presence of lung cancer (p = 0.035), chronic obstructive pulmonary disease (COPD) (p = 0.034), long-term ICI use (p = 0.010), dyspnea (p = 0.025), cough (p = 0.003) and sputum (p = 0.004), lung nodule-mass before ICI (p = 0.035), high blood monocyte count (p = 0.003). Among the risk factors we identified for ICI-associated pulmonary toxicity, smoking increased the risk by 0.070 times, COPD by 0.173 times, malignancy type by 1.8 times, each 1-unit decrease in lymphocyte count increased the risk by 0.998 times, and monocyte counts of 130 and below increased the risk by 11.75 times. **Conclusions:** The study showed that individuals with risk factors for lung toxicity should be closely monitored at regular intervals during ICI treatment, and especially lymphocyte and monocyte ratio may be a predictive marker in this regard. Research Sponsor: None.

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