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Immune-related ocular toxicities in solid tumor patients treated with immune checkpoint inhibitors: a systematic review.

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Abstract

Immune-related ocular toxicities are uncommon but serious adverse events that may be associated with the use of immune checkpoint inhibitors. The objective of this review is to assess the incidence and risk of ocular toxicities which are potentially immune-related and occur with immune checkpoint treatment of solid tumors. Areas covered: PubMed database has been searched till June 2016. Prospective clinical trials reporting the occurrence of immune-related ocular toxicities in solid tumor patients treated with immune checkpoint inhibitors were included. Eleven trials with 4965 participants were included. These studies included one study for ipilimumab and tremelimumab, three studies for nivolumab, five studies for pembrolizumab and one study comparing pembrolizumab to ipilimumab. No atezolizumab studies were included. The most common ocular toxicities reported with these agents included uveitis and dry eyes. Pooled analysis for odds ratio of all immune-related ocular toxicities is 3.40 [95% CI: 1.32-8.71; P = 0.01]. Expert commentary: Despite being uncommon, immune-related ocular toxicities (particularly uveitis and dry eyes) occur with a higher frequency in cancer patients treated with immune checkpoint inhibitors compared to those treated with control regimens.

KEYWORDS: Pembrolizumab; atezolizumab; nivolumab; ocular toxicities

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