

Case Study: Use of Pembrolizumab in treatment of invasive melanoma with risk for sensorineural hearing loss.

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Increasingly used to treat a variety of cancers by enhancing the immune response against cancer cells. Pembrolizumab is a humanized antibody which prevents tumor cells from deactivating host T-cells. Like most forms of immunotherapy, many of the adverse effects are autoimmune in origin due to the heightened immune response. Case: We present a rare case of Pembrolizumab induced autoimmune hearing loss in a patient with invasive melanoma which was responsive to steroids. A 67-year-old male presented with metastatic melanoma of the toe. He underwent amputation followed by treatment with IV pembrolizumab 2 mg/kg every 3 weeks. After a single dose, he experienced severe bilateral sensorineural hearing loss. His treatments were stopped and he was started on oral steroids. He later also underwent intratympanic steroid injection. He ultimately achieved improvement to normal-to-mild hearing loss levels in conversational frequencies with subjective return to baseline hearing. According to the FDA, this is one of 14 reported cases of autoimmune hearing loss from Pembrolizumab. Conclusion: Autoimmune hearing loss is a rare, but significant adverse effect of Pembrolizumab treatment for advanced melanoma which is responsive to steroids started up to 4 weeks after onset. While heightened awareness of this response is necessary, we do not recommend routine audiograms in patients undergoing treatment.