The Laryngoscope

LETTER TO THE EDITOR

In Reference to *The Impact of Monoclonal Antibody Usage on Hearing Outcomes: A Systematic Review*

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Dear Editor,

We read the paper of Arya et al. [1] entitled "The Impact of Monoclonal Antibody Usage on Hearing Outcomes: A Systematic Review". The authors conducted a systematic review investigating the ototoxicity related to monoclonal antibodies (mABs). They included 44 studies (18.046 patients) reporting that 1079 patients reported symptoms of ototoxicity. The authors concluded that while mABs were widely available, the systematic audiological surveillance necessary to identify these potentially related ototoxic effects was lacking and needed to be instituted. Such limitation is highlighted by the fact that only 15.9% of included studies had performed audiometry at baseline and ultrahigh frequency testing was only performed in 4.5% of the studies. It is also important to mention that this limitation may partially be attributable to the mostly retrospective nature of the studies included here and the lack of standardized mABs ototoxicity monitoring protocols, unlike those implemented for platinum-based chemotherapeutic agents [2]. These findings, which comprehend data on patients receiving 7 different mAB classes should prompt meaningful debate about causation and attribution. The complex patient population, differing concomitant medications, and variance in underlying conditions limit the ability to definitively establish direct causal links. Moreover, the preponderance of case reports and series (70.5% of the included studies) raises a reporting bias resulting in overestimation of the true incidence of ototoxicity.

The paradoxical ototoxic and otoprotective effects of TNF-α inhibitors can be particularly interesting [3] because this apparent conflict may reflect current findings of cochlear immunology and the potential roles of patient-specific parameters which may influence responses to these agents.

The significant clinical demographic skew seen in the study population, wherein female patients are markedly underrepresented, raises questions as to whether there may be sex-specific differences in susceptibility to mAB-related ototoxicity [4]. Furthermore, heterogeneous follow-up periods and variable reporting of long-term outcomes challenge the generalizability and permanence of these effects [1, 4].

Implementing audiometric protocols using standardized tympanometry would be an important next step. However, practical challenges do remain, particularly in settings with resource constraints, along with the cost implications of wide-ranging monitoring programs and the ideal frequency of testing. Determining the threshold of intervention after detecting audiometric changes may be complex and assessed on risk–benefit considerations, especially when a life-threatening condition is at play.

The results reported by Arya et al. [1] provide an important basis for further work but also demonstrate the complexities

associated with studying ototoxicity within this therapeutic class. Longer follow-up periods and prospective studies using standardized protocols would help characterize these effects better and guide evidence-based monitoring recommendations.

Conflicts of Interest

The authors declare no conflicts of interest.

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