

Beyond ICANS: A Pharmacovigilance Study on Neurotoxicity Related to Bispecifics in Multiple Myeloma

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CONTEXT

The therapeutic landscape in multiple myeloma has drastically evolved since the approval of bispecific antibodies. Neurotoxicity attributed to these agents has been framed almost entirely around immune effector cell associated neurotoxicity syndrome (ICANS). The spectrum of non-ICANS neurotoxicity remains poorly characterized.

OBJECTIVE

To characterize non-ICANS neurotoxicity caused by bispecific antibodies using the FDA Adverse Event Reporting System (FAERS).

METHOD

The FAERS database was queried for neurotoxicity reported with elranatamab, teclistamab and talquetamab. Nervous system toxicities were selected, ICANS events were separated out, and the remaining non-ICANS events were categorized into groups: taste disturbance, peripheral/sensory neuropathy, consciousness and cognitive events, and cranial nerve palsies.

KEY NUMBERS

688	nervous system events across three agents
240	ICANS events 34.9% of total
448	non-ICANS events 65.1% of total

RESULTS

A total of 688 nervous system events were identified: 307 with teclistamab, 212 with talquetamab and 169 with elranatamab.

ICANS accounted for 240 of these (116, 64 and 60 respectively), leaving 448 non-ICANS events — roughly two thirds of the reported burden.

The non-ICANS phenotype differed sharply between agents (Figure 2).

CONCLUSION

Bispecific antibodies cause a substantial percentage of non-ICANS neurotoxicities, which can be subcategorized into taste-related events, consciousness and cognition events, and neuropathies. This analysis sheds light on underrecognized patterns, which can in turn translate into better recognition and management of non-ICANS neurotoxicities in patients receiving bispecifics.

Figure 1. Nervous system events by agent, ICANS vs non-ICANS

Agent		Event distribution		Total	ICANS	Non-ICANS
Teclistamab				307	116	191
Talquetamab				212	64	148
Elranatamab				169	60	109
All agents				688	240	448

Bar length is proportional to total events. Non-ICANS = total – ICANS.

Figure 2. Predominant non-ICANS phenotype

Shown as a share of that agent's non-ICANS events, not of its total events

Teclistamab	Cognition and consciousness: encephalopathy, somnolence, lethargy, attention disturbance	84 / 191	43.9%
Talquetamab	Taste disturbance: dysgeusia, ageusia, hypogeusia, taste disorder	126 / 148	85.1%
Elranatamab	Neuropathy and sensory events, including peroneal, facial and abducens nerve palsies	43 / 109	39.4%

CONTACT INFORMATION

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