# Supplementary Material

## Multimodal Artificial Intelligence for Remote Triage of Immunotherapy Toxicities

## Supplementary Table S1. Toxicity in selected trials of T-cell-engaging bispecific antibodies

| Agent | Trial and population | CRS, any grade | CRS, grade 3+ | Median onset / duration | ICANS or neurologic events | Source |
|---|---|---|---|---|---|---|
| Teclistamab | MajesTEC-1; n=165 | 72.1% | 0.6% | 2 days / 2 days | ICANS 3.0%; all grade 1 or 2 | (40) |
| Elranatamab | MagnetisMM-3; n=119 | 56.3% | 0% | 2 days / 2 days | ICANS 3.4%; all grade 1 or 2 | (41) |
| Talquetamab | MonumenTAL-1; n=30 and n=44 | 77% / 80% | 3% / 0% | 2 days / 2 days | Treatment-related neurotoxicity 10% / 5%; all grade 1 or 2 | (42) |
| Epcoritamab | EPCORE NHL-1; n=157 | 49.7% | 2.5% | 20 hours / 48 hours | ICANS 6.4%; one grade 5 event | (44) |
| Tarlatamab | DeLLphi-301; n=133 and n=87 | 51% / 61% | 1% / 6% | 13.1 hours / 4 days | ICANS or related events 8% / 28%; grade 3+ 0% / 5% | (43) |

Rates and definitions follow the cited reports. Most step-up doses used planned observation. CRS, cytokine release syndrome; ICANS, immune effector cell-associated neurotoxicity syndrome.

## Supplementary Table S2. Unscored SANRA transparency checklist

| SANRA item | Where addressed | Transparency note |
|---|---|---|
| Importance | Context | Explains the monitoring gap and harm from delay |
| Aims | End of Context | States the review focus and clinical question |
| Literature search | Evidence Acquisition; Table S3 | Gives sources, dates, searches, and limits |
| Referencing | Text and reference list | Links claims to studies, guidance, and official sources |
| Scientific reasoning | Results and Limitations | Separates detection, prediction, and triage |
| Endpoint data | Table 2 | Reports task, timing, performance, validation, and limits |

The checklist describes reporting. It is not a numerical quality score. It does not make this review systematic.

## Supplementary Table S3. Reproducible PubMed searches

| Search | Purpose | Verbatim PubMed query | Records |
|---|---|---|---|
| Q1 | Core multimodal search | (("immune checkpoint inhibitor"[Title/Abstract] OR "CAR T"[Title/Abstract] OR "bispecific antibody"[Title/Abstract] OR "T-cell engager"[Title/Abstract]) AND (toxicity[Title/Abstract] OR "immune-related adverse event"[Title/Abstract] OR "cytokine release syndrome"[Title/Abstract] OR ICANS[Title/Abstract]) AND ("artificial intelligence"[Title/Abstract] OR "machine learning"[Title/Abstract] OR "natural language processing"[Title/Abstract] OR wearable[Title/Abstract] OR telemedicine[Title/Abstract] OR "remote monitoring"[Title/Abstract] OR "patient-reported outcome"[Title/Abstract] OR biosensor[Title/Abstract])) AND 1900/01/01:2026/09/05[Date - Publication] | 246 |
| Q2 | Checkpoint inhibitor monitoring | (("immune checkpoint inhibitor"[Title/Abstract]) AND ("immune-related adverse event"[Title/Abstract] OR toxicity[Title/Abstract]) AND ("patient-reported outcome"[Title/Abstract] OR ePRO[Title/Abstract] OR telemedicine[Title/Abstract] OR "remote monitoring"[Title/Abstract] OR wearable[Title/Abstract] OR "artificial intelligence"[Title/Abstract] OR "machine learning"[Title/Abstract] OR "natural language processing"[Title/Abstract])) AND 1900/01/01:2026/09/05[Date - Publication] | 182 |
| Q3 | CAR T-cell prediction | (("CAR T"[Title/Abstract] OR "chimeric antigen receptor T"[Title/Abstract]) AND ("cytokine release syndrome"[Title/Abstract] OR CRS[Title/Abstract] OR ICANS[Title/Abstract] OR neurotoxicity[Title/Abstract]) AND (predict*[Title/Abstract] OR detect*[Title/Abstract] OR monitor*[Title/Abstract] OR wearable[Title/Abstract] OR telemedicine[Title/Abstract] OR outpatient[Title/Abstract] OR "machine learning"[Title/Abstract])) AND 1900/01/01:2026/09/05[Date - Publication] | 1,355 |
| Q4 | T-cell engager timing | ((teclistamab[Title/Abstract] OR elranatamab[Title/Abstract] OR talquetamab[Title/Abstract] OR epcoritamab[Title/Abstract] OR tarlatamab[Title/Abstract] OR "bispecific antibody"[Title/Abstract] OR "T-cell engager"[Title/Abstract]) AND ("cytokine release syndrome"[Title/Abstract] OR CRS[Title/Abstract] OR ICANS[Title/Abstract] OR neurotoxicity[Title/Abstract]) AND ("step-up"[Title/Abstract] OR outpatient[Title/Abstract] OR monitor*[Title/Abstract] OR onset[Title/Abstract] OR duration[Title/Abstract])) AND 1900/01/01:2026/09/05[Date - Publication] | 273 |

All searches were run on 5 September 2026. Counts overlap and were not deduplicated. They are not a PRISMA flow.