Pooled safety analysis of Modified Vaccinia Virus Ankara-based therapeutic vaccine alone or in combination in cancer clinical trials.

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Background

Transgene (TG) has developed therapeutic vaccines, based on Modified Vaccinia Virus Ankara (MVA) viral vector. TG MVA-based products (TG) were used as single agent or combined with chemotherapy (CT) and/or immune checkpoint inhibitor (ICI) in phases I-II cancer trials in several indications and in CIN clinical trials.

Method

Transgene (TG) has developed therapeutic vaccines, based on Modified Vaccinia Virus Ankara (MVA) viral vector. TG MVA-based products (TG) were used as single agent or combined with chemotherapy (CT) and/or immune checkpoint inhibitor (ICI) in phases I-II cancer trials in several indications and in CIN clinical trials.

Results

7 phase I (n=56), 1 phase Ib/II (n=94) and 11 phase II trials (n=504) were reviewed. 654 patients (pts) were exposed, 447 (68.3%) experienced 1845 ADRs. Out of these 447 pts, 199 pts had received TG alone, 132 were exposed to combination with platinum-based CT, 88 pts had an ICI (aPD(L)-1) combination and 28 pts a combination of TG+ICI+CT. Local reactions at the injection site were the most frequently observed: 1023 events were reported in 342 pts, all being grade 1 or 2 and estimate with an occurrence of 76.4% using XGboost algorithm for pt experienced an ADR. Other frequent ADRs were fatigue (111 events in 73 pts all grade 1/2 except 2 episodes in 2 pts) and pyrexia (94 events in 63 pts, all grade 1/2) and estimate respectively to 16.3% and 14% with prediction algorithm. A total of 36 grade 3/4 ADRs were experienced by 22 pts with hematological disorders (9 pts), fatigue, asthenia and gastrointestinal disorders (2 pts) being the most frequent. Out of these 36 events, only 1 under TG alone. 10 serious ADRs were reported in 5 pts: no particular pattern could be observed. 2 pts patients experienced grade 5 ADRs (renal failure, left ventricular failure), both as well evaluated by the investigator as related to underlying disease.

Conclusions

TG alone has few side effects other than local site reactions. In combination with other agents, the safety is manageable and allows further development of TG+ICI in oncology.