

Abstract for ESMO 2018

Title: Elderly patients with locally advanced head and neck squamous cell carcinoma treated with NBTXR3 nanoparticles activated by radiotherapy: a phase I trial.

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Background:

Elderly patients (pts) with head and neck squamous cell carcinoma (HNSCC) represent 25% of the affected population. They are not always eligible to the same treatment of younger pts, thus require new therapies. NBTXR3, injectable hafnium oxide nanoparticles activated by radiotherapy (RT), was developed to increase the local deposit of energy within the tumor. It is currently evaluated in a phase I trial for locally advanced HNSCC in elderly and frail pts.

Methods:

So far, 16 pts ≥ 65 years ineligible for surgery and cisplatin, the non-surgical standard of care, or intolerant to cetuximab, but eligible for RT with stage III or IV HNSCC of the oral cavity/oropharynx were treated with a single NBTXR3 intratumoral (IT) injection. A 3 + 3 dose escalation design was applied with dose levels at 5%, 10%, 15%, 22% of baseline tumor volume followed by intensity-modulated RT (IMRT; 70 Gy / 35 fractions / 7 weeks). Primary endpoints were determining the Recommended Dose and of Dose Limiting Toxicities (DLTs). NBTXR3 leakage in nearby healthy tissues and efficacy per RECIST 1.1 response via MRI were evaluated. Pts are followed until disease progression/study cut-off date.

Results:

Enrollment is at the fourth level at 22% (5 pts) and complete for the first three at 5% (3 pts), 10% (3 pts), 15% (5 pts) with no early DLTs. Two adverse events (AE; asthenia, grade 1; oral pain, grade 2) related to NBTXR3 and four AEs (two tumor hemorrhage, grade 1; asthenia, grade 1; oral pain, grade 2) related to the IT injection were reported. NBTXR3 persistence in the tumor with no leakage was assessed per CT scan between 24h and 7 weeks post injection.

	5% (n = 3)	10% (n = 3)	15% (n = 5)	22% (n = 2)	Total (n = 13)
Complete response (CR)	0	1 (33%)	4 (80%)	1 (50%)	6 (46%)
Partial response (PR)	2 (67%)	1 (33%)	1 (20%)	0	4 (31%)
No change (NC)	1 (33%)	1 (33%)	0	1(50%)	3 (23%)

In 13 evaluable pts, the best response per RECIST 1.1 on investigator assessment were 6 CR, 4 PR, 3 NC.

Conclusions:

Current results indicate a safe and well tolerated profile for NBTXR3 even at the highest doses highlighting an encouraging perspective in the elderly. This population stress a medical need of which few HNSCC trials answer.

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