Concurrent Radiotherapy and Pembrolizumab in Triple-Negative Breast Cancer: A Safety Analysis

A. EL FAKIH, P. LOAP, L. CABEL, S. ALLALI, K. CAO, M. MIRABEL, J. PIERGA, Y. KIROVA
Institut Curie Paris, Paris, FRANCE

SAN ANTONIO BREAST CANCER SYMPOSIUM® · AACR · DECEMBER 9-12, 2025 · HENRY B. GONZALEZ CONVENTION CENTER · SAN ANTONIO, TX

Background

- TNBC ~15% of invasive breast cancers, poor prognosis.
- KEYNOTE-522 established pembrolizumab as SOC.
- RT remains essential; combination safety uncertain.

Objective

Assess safety of concurrent RT + pembrolizumab.

Methods

- Monocentric retrospective cohort (Institut Curie, Paris).
- Locally advanced TNBC treated per KEYNOTE-522.
- Groups: RT-P (RT + pembrolizumab) vs RT.
- Endpoints: tolerance (primary), OS & CSS (secondary).
- Significance: $p < 0.05$.

Results

- N = 89 (median follow-up: 16 months).
- RT: 41 pts; RT-P: 48 pts.
- Baseline characteristics: balanced.

Toxicities

- Skin: G1 radiodermatitis more frequent with RT-P (83.3% vs. 43.9%).
- Pulmonary: 2 cases G1 in RT-P.
- Cardiac: mean heart dose 1.8 Gy, no toxicity.
- Severe Aes (≥ G3): none.

Toxicity (CTCAE v5. graded)	Total (n=89)	%	Concurrent RT-pembrolizumab (n=48)	%	Pembrolizumab withheld (n=41)	%	p-value
Early radiation-induced toxicity							
Radiodermatitis							
grade 0	28	31.5 %	8	16.7 %	20	48.8 %	<0.001
grade 1	58	65.2 %	40	83.3 %	18	43.9 %	
grade 2	3	3.4 %	0	0 %	3	7.3 %	
Esophagitis							
grade 0	84	94.4 %	47	97.9 %	37	90.2 %	0.265
grade 1	4	4.5 %	1	2.1 %	3	7.3 %	
grade 2	1	1.1 %	0	0 %	1	2.4 %	
Oedema							
grade 0	82	92.1 %	43	89.6 %	39	95.1 %	0.567
grade 1	7	7.9 %	5	10.4 %	2	4.9 %	
Xerodermia							
grade 0	86	96.6 %	47	97.9 %	39	95.1 %	0.89
grade 1	3	3.4 %	1	2.1 %	2	4.9 %	
Pruritis							
grade 0	86	96.6 %	46	95.8 %	40	97.6 %	0.236
grade 1	2	2.2 %	2	4.2 %	0	0 %	
grade 2	1	1.1 %	0	0 %	1	2.4 %	
Tracheitis							
grade 0	87	97.8 %	46	95.8 %	41	100 %	0.546
grade 1	2	2.2 %	2	4.2 %	0	0 %	
Pain							
grade 0	87	97.8 %	47	97.9 %	40	97.6 %	1
grade 1	2	2.2 %	1	2.1 %	1	2.4 %	
Late radiation-induced toxicity							
Oedema							
grade 0	88	98.9 %	47	97.9 %	41	100 %	1
grade 1	1	1.1 %	1	2.1 %	0	0 %	
Lung fibrosis							
grade 0	87	97.8 %	46	95.8 %	41	100 %	0.546
grade 1	2	2.2 %	2	4.2 %	0	0 %	

Table 1. Comparaison of CTCAE toxicity grades in concomitant vs. interrupted pembrolizumab and radiotherapy groups,

Conclusions

- Concurrent RT + pembrolizumab is safe in TNBC.
- No increase in severe RT-related toxicities.
- Supports continuation of systemic therapy during RT.
- Larger prospective trials needed to assess long-term toxicity (esp. cardiac).

© POSTER TEMPLATE BY GENIGRAPHICS® 1.800.790.4001 WWW.GENIGRAPHICS.COM