

Chapter 16

Re-irradiation



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16.1 Re-irradiation Literature

Study	Patients	Treatment	Median f/u	Outcomes
<i>Prospective studies</i>				
Vargo 2015 [1]	<i>n</i> = 50, recurrent H&N SCC, inoperable (majority OPX) Previous EBRT median 70 Gy Median time between recurrence 26 months Median tumor volume 36 cc	SBRT + concurrent cetuximab 40–44 Gy/5 fx, qod CTV = GTV PTV = CTV + 3–5 mm Rx dose: 95% PTV	18 months	60% 1 year local PFS 40% 1 year OS Toxicity: 6% G3 acute/late toxicity
Comet 2012 [2]	<i>n</i> = 40, recurrent H&N SCC, inoperable Previous EBRT (median 66 Gy) Median time between recurrence 31 months Median PTV volume 64 cc	SBRT + concurrent cetuximab 6 Gy × 6 fx, qod CTV = GTV + 5 mm PTV = CTV + 1 mm Rx dose: 85% IDL	25 months	79% response rate 24% 2 years OS Late toxicity: no G4+ late toxicity

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Study	Patients	Treatment	Median f/u	Outcomes
Vargo 2012 [3]	<i>n</i> = 34, recurrent H&N cancer, inoperable (majority salivary gland, oral cavity) Previous EBRT median 61 Gy Median time between recurrence 53 months Median tumor volume 19 cc	SBRT Median 5 Gy × 8 fx, qod PTV = GTV Rx dose: 80% IDL (95% PTV coverage)	10 months	59% 1 year LC 59% 1 year OS Toxicity: 6% G3 late toxicity; no G4/G5 toxicity
Heron 2009 [4]	<i>n</i> = 25, recurrent H&N SCC, inoperable (majority larynx) Previous EBRT median 65 Gy Median time between recurrence 13 months Median tumor volume 45 cc	SBRT 5 Gy × 5–9 fx, qod Rx dose: 80% IDL	Not specified	76% response rate 6 months Median OS Late toxicity: no G3+ late toxicity
<i>Retrospective studies</i>				
Ling 2016 [5, 6]	<i>n</i> = 291, recurrent H&N cancer Previous EBRT median 68 Gy Median tumor volume 29 cc	SBRT ± concurrent cetuximab (~50% received) Median 44 Gy/5 fx, qod CTV = GTV PTV = CTV + 3–5 mm Rx dose: 80% IDL	53 months	Toxicity: 11% ≥G3 acute; 19% ≥G3 late Larynx/hypopharynx: 50% ≥G3 late toxicity vs. 6–20% all other sites
Owen 2015 [7]	<i>n</i> = 184, recurrent H&N cancer, majority SCC (heterogeneous population) Median tumor volume 16 cc	SBRT Majority tx with EBRT + SBRT boost Median EBRT dose 61 Gy Boost: median 14 Gy × 1 fx Rx dose: 50% IDL	17 months	82% 1 year LC 41% 1 year OS Toxicity: 32% experienced late toxicity, including temporal lobe necrosis, CN palsy, facial numbness, and pain
Rwigema 2011 [8]	<i>n</i> = 96, recurrent H&N cancer, inoperable Previous EBRT median 68 Gy Median tumor volume 24 cc	SBRT: Grp 1: 15–28 Gy/5 fx Grp 2: 30–36 Gy/5 fx Grp 3: 40 Gy/5 fx Grp 4: 44–50 Gy/5 fx	14 months	Improved response rate with >40 Gy and tumor volume ≤25 cc

16.2 Summary

There are variable disease sites, doses used, dose fractionation schemes, IDL prescription, and systemic therapy used in all of these studies. Severe toxicity was also somewhat variable, with frequencies as high as 50% in some studies. Long-term follow-up is needed to monitor for these late toxicities.

Several studies have looked at the combination of SBRT with cetuximab in the recurrent setting with good results. However, we recommend against the use of concurrent systemic therapy due to the concern of increasing toxicity, but it would be reasonable to study on a prospective trial.

References

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