

**Table 1. General information of the study cohort and their tumors**

Characteristics	Cases	Percentage
<b>Sex</b>		
Male	20	64.5
Female	11	35.5
<b>Age: years, median (range)</b>	52 (25-73)	
<b>Karnofsky Performance Status: median (range)</b>	80(60-90)	
<b>Pathologic types</b>		
Non-keratinizing	17	54.8
Squamous cell carcinoma	14	45.2
<b>Previous EBRT frequency</b>		
Once	20	64.5
Two times	9	29.0
Three times	2	6.5
<b>Total dose of previous EBRT: Median (Range)</b>	71.9 (60-160)	
<b>Previous surgery</b>		
Yes	7	22.6
No	23	74.2
Not known	1	3.2
<b>Previous chemotherapy</b>		
Yes	23	74.2
No	8	25.8
<b>Previous molecular targeted therapy</b>		
Yes	7	22.6
No	24	77.4
<b>Recurrent sites</b>		
In situ	14	45.2
Lymph node	17	54.8
<b>Time from the initial EBRT to implantation: months, median (range)</b>	19.6 ( 2.1-113.3 )	

EBRT, external beam radiotherapy

**Table 2. Univariate analysis of LC for recurrent NPC**

Variables	Categories	Univariate analysis		
		HR	95%CI	p-value
Sex	Male	0.316	0.107-0.935	0.037
	Female			
Age (years)	≤50	1.828	0.648-5.157	0.255
	> 50			
Pathology	Non-keratinizing	0.840	0.502-1.405	0.507
	Squamous			
Previous EBRT times	1	0.115	0.032-0.415	0.001
	2-3			
Time from EBRT to RSI-BT (months)	≤18	1.733	0.573-5.243	0.330
	> 18			
KPS	≥80	0.261	0.076-0.900	0.033
	< 80			
Implantation Sites	In situ	2.517	0.782-8.108	0.122
	Lymph nodes			
D90 (Gy)	< 120	1.126	0.383-3.314	0.829
	≥120			
RSI-BT assistance	Without 3D-PT	6.242	0.814-47.867	0.078
	3D-PT			
Short-term efficacy	CR+PR	0.785	0.167-3.683	0.759
	SD+PD			

EBRT, external beam radiotherapy; HR, hazard ratio; CI, confidence interval; LC, local control; NPC, nasopharyngeal carcinoma; CR, complete response; PR, partial response; SD, stable disease; PD, progressive disease.

**Table 3. Univariate analysis of OS for NPC**

Variables	Categories	Univariate analysis		
		HR	95%CI	p-value
Sex	Male	0.730	0.285-1.871	0.512
	Female			
Age (years)	≤50	0.742	0.277-1.984	0.552
	> 50			
Pathology	Non-keratinizing	0.813	0.321-2.062	0.663
	Squamous			
Previous EBRT times	1	0.288	0.109-0.756	0.012
	2-3			
Time from EBRT to RSI-BT (months)	≤18	0.899	0.348-2.322	0.826
	> 18			
KPS	≥80	0.367	0.122-1.108	0.075
	< 80			
Implantation Sites	In situ	0.993	0.389-2.533	0.988
	Lymph nodes			
D90 (Gy)	< 120	0.837	0.299-2.346	0.735
	≥120			
RSI-BT assistance	Without 3D-PT	1.509	0.535-4.252	0.437
	3D-PT			
Short-term efficacy	CR+PR	0.579	0.181-1.854	0.357
	SD+PD			

EBRT, external beam radiotherapy; HR, hazard ratio; CI, confidence interval; OS, overall survival; NPC, nasopharyngeal carcinoma; CR, complete response; PR, partial response; SD, stable disease; PD, progressive disease.

**Table 4. Outcomes of published retrospective studies on RSI-BT as treatment for NPC**

Author	No. of patients	Tumor Volume	Dose (Gy)	Median follow up (Months)	Local Control (%)	Overall Survival (%)
Yuliang Jiang (2010) <sup>41</sup>	14 (3 NPC)	32(9.1-290.4)	157.5(90-218)	12(3-60)	Median 18mo 1y 52% 3y 39% 5y 39%	Median 18mo 1y 52% 3y 39% 5y 39%
Lihong Zhu (2013) <sup>42</sup>	19 (1 NPC)	20 ( 1-270 )	131(90-160)	11 ( 3-44 )	Median 24mo 1y 73.3% 2y 27.5% 3y 27.5%	Median 24mo 1y 73.3% 2y 27.5% 3y 27.5%
Xinying Shen (2015) <sup>43</sup>	30	Diameter 2.5±1.2cm (1.0-5.9)	130 (90-160)	2-38	1y 73.7% 2y 26.3% 3y 5.3%	1y 73.7% 2y 26.3% 3y 5.3%
Hai Huang (2016) <sup>44</sup>	31 (9 NPC)	Mean 21.23 ± 8.83 cm <sup>2</sup>	Mean 101.03 ± 8.54 (90–125)	Range 6-38	1y 64.51% 2y 45.16%	1y 64.51% 2y 45.16%
Huzheng Yan (2017) <sup>45</sup>	81 (39 RSI-BT)	NR	120(100-140)	30(5-68)	1y 71.7% 2y 41.0% 3y 23.1%	1y 71.7% 2y 41.0% 3y 23.1%
Zhe Ji (2018) <sup>40</sup>	101 (28 NPC)	15.5(2.4-99.4)	117 (44-246)	12.2(2.9-73.2)	5y 26.6%	5y 26.6%
Ping Jiang (2019) <sup>46</sup>	64 (12 NPC)	Mean 8cc(2.5-320)	130(90-160)	14(1-103.5)	1y 75.2% 3y 73.0% 5y 69.1%	1y 75.2% 3y 73.0% 5y 69.1%

NR, not reported.