Patient Treatment Timeline x indicates month of patient death P01: 45 | F | 77 | 15 | 15 P35: 61 | F | 39.5 | 10 | 10 P45: 81 | M | 61.3 | 24 | 24 P58: 61 | F | 85.6 | 10 | 8 P19: 50 | F | 50.4 | 14 | 10 P54: 61 | F | 63 | 10 | 9 P10: 70 | F | 69 | 15 | 15 Progressive disease (PD) - No - Yes P26: 81 | M | 74 | 10 | 14 P04: 60 | M | 73 | 15 | 14 P50: 69 | M | 66.5 | 10 | 10 P33: 68 | M | 56.6 | 10 | 8 Maintain P62: 54 | M | 58 | 10 | 9 P56: 69 | M | 72.3 | 10 | 12 P41: 76 | F | 42 | 10 | 10 P49: 79 | F | 37.3 | 10 | 5 P57: 74 | F | 61.6 | 10 | 4 P59: 70 | F | 69.9 | 4 | 4 dose P53: 48 | F | 85.9 | 14 | 14 | P55: 58 | F | 49.3 | 10 | 10 | P47: 80 | F | 62 | 20 | 20 | P38: 72 | F | 32.2 | 10 | 7 Initial P17: 82 | F | 42.8 | 10 | 10 P29: 65 | F | 65 | 10 | 14 P22: 70 | M | 75 | 10 | 8 P36: 81 | M | 79.3 | 7 | 7 P11: 47 | F | 52.1 | 10 | 10 P21: 73 | M | 68.2 | 10 | 10 P42: 69 | M | 93.5 | 14 | 10 P37: 42 | F | 46.2 | 10 | 4 P39: 70 | F | 62.4 | 10 | 10 P48: 76 | M | 73.4 | 14 | 4 P34: 75 | F | 52.9 | 4 | 5 P27: 43 | M | 85 | 14 | 14 P13: 72 | M | 76.5 | 14 | 7 P16: 76 | M | 52 | 10 | 18 P40: 74 | M | 72.8 | 10 | 10 P24: 68 | M | 80 | 10 | 7 Age | P44: 70 | F | 57 | 24 | 14 P43: 77 | F | 46.5 | 14 | 5 P09: 77 | F | 65 | 10 | 10 P31: 74 | M | 61 | 24 | 10 P20: 66 | F | 55.7 | 10 | 10 P60: 45 | M | 65.5 | 10 | 15 P02: 69 | M | 76 | 14 | 14 P08: 64 | F | 50.5 | 10 | 10 P12: 59 | M | 57.8 | 10 | 8 P61: 62 | M | 80.4 | 14 | 14 = P25: 60 | M | 79 | 14 | 10 = P03: 34 | F | 47.4 | 24 | 14 = P23: 51 | M | 67 | 24 | 20 = P14: 52 | M | 90.7 | 14 | 14 P30: 79 | F | 58.7 | 10 | 10 P08: 43 | F | 69 | 10 | 7 P15: 63 | M | 65.2 | 20 | 14 P32: 68 | F | 63.4 | 24 | 4 · P18: 69 | F | 55 | 14 | 10 · P07: 68 | M | 60.8 | 20 | 14 = P46: 70 | F | 47.1 | 24 | 20 = 12 24 30 36 18 42 Months of Follow-Up

Supplementary Figure 1. The treatment timeline of all recruited patients of radioiodine-refractory differentiated thyroid carcinoma included patient's ID, age, sex, body weight, initial dose and maintenance dose of lenvatinib treatment.

Supplementary Table S1: Adverse events of low maintenance dose of lenvatinib

Adverse effect	Any grade	Grade 1	Grade 2	Grade 3	Grade 4
Hypertension	42 (64.6%)	31 (47.7%)	9 (13.8%)	2 (3.1%)	-
Proteinuria	32 (49.2%)	17 (26.2%)	11 (16.9%)	4 (6.2%)	-
Diarrhea	13 (20.0%)	9 (13.8%)	4 (6.2%)	-	-
Asthenia	36 (55.4%)	30 (46.2%)	5 (7.7%)	1 (1.5%)	-
Weight loss	19 (29.2%)	15 (23.1%)	4 (6.2%)	-	-
Hand-foot syndrome	25 (38.5%)	16 (24.6%)	7 (10.8%)	2 (3.1%)	-
Anorexia	24 (36.9%)	20 (30.8%)	3 (4.6%)	1 (1.5%)	-

The adverse effect was evaluated by the National Cancer Institute Common Terminology Criteria for Adverse Events (CTCAE) version 5.0.

Supplementary Table S2. ECOG details.

Characteristics -	PD (Group	Non-PD	P
Characteristics	PFS≤10.5 m	PFS>10.5 m	patients	P
ECOG before lenvatinib				0.363
0	2 (15.4%)	2 (14.3%)	13 (33.3%)	
1	8 (69.2%)	9 (69.2%)	23 (59.0%)	
2	1 (7.7%)-	2 (15.4%)	2 (5.1%)	
3	1 (7.7%)	-	1 (2.6%)	
4	1 (7.7%)	-	-	
ECOG after lenvatinib				0.452
0	1 (7.7%)	1 (7.1%)	8 (20.5%)	
1	9 (69.2%)	11 (84.6%)	28 (71.8%)	
2	2 (15.4%)	1 (7.7%)	3 (7.7%)	
3	1 (7.7%)	-	-	
4	-	-	-	