

Table I. Correlation between serum CA 15-3 and CEA levels at initial diagnosis of recurrence and tumor size, nodal status, grade distribution, and molecular subtypes.

Character	CA 15-3			CEA		
	Normal	Elevated	P value	Normal	Elevated	P value
Tumor size						
T1	5(33%)	10(66.6%)	0.34	7(46.7%)	8(53.3%)	0.45
≥ T2	8(22.8%)	27(77.2%)		11(31.4%)	24(68.6%)	
Lymph node status						
N0	4(36.4%)	7(63.6%)	0.41	4(36.4%)	7(63.6%)	0.30
≥ N1	9(23.1%)	30(76.9%)		15(38.5%)	24(61.5%)	
Grade						
I	3(20%)	12(80%)	0.10	4(30.8%)	9(69.2%)	0.12
II	5(26.9%)	14(73.7%)		5(31.3%)	11(68.7%)	
III	7(43.8%)	9(56.2%)		10(47.6%)	11(52.4%)	
Molecular subtype						
Luminal A	5 (29.4%)	12 (70.6%)	0.005	8 (47.1%)	9 (52.9%)	0.008
Luminal B	4 (28.6%)	10 (71.4%)		5 (35.7%)	9 (64.3%)	
Luminal /HER2	1 (14.3%)	6 (85.7%)		2 (28.6%)	5 (71.4%)	
HER2-enriched	1 (25%)	3 (75%)		1 (25%)	3 (75%)	
Triple Negative	2 (25%)	6 (75%)		2 (25%)	6 (75%)	

Table II. Correlation between serum CA 15-3 and CEA levels at initial diagnosis of recurrence and number of metastatic site and site of first distant metastasis.

Number of metastatic site							
Single	8 (34.8%)	15 (65.2%)	0.25	5 (21.7%)	18 (78.3%)	0.45	
Multiple	5 (18.5%)	22 (81.5%)		13 (48.2%)	14 (51.8%)		
Metastatic site							
Bone	+	8 (80%)	2 (20%)	0.49	5 (50%)	5 (50%)	0.50
	-	10 (77%)	3 (23%)		13 (100%)	0 (0%)	
Brain	+	1 (100%)	0 (0%)	0.39	1 (100%)	0 (0%)	0.45
	-	14 (64%)	8 (36%)		17 (77%)	5 (23%)	
Liver	+	1 (33%)	2 (66%)	0.58	2 (66%)	1 (33%)	0.45
	-	14 (70%)	6 (30%)		16 (80%)	4 (20%)	
Lung	+	2 (50%)	2 (50%)	0.50	2 (50%)	2 (50%)	0.50
	-	13 (68%)	6 (32%)		16 (84%)	3 (16%)	
Distant node	+	3 (100%)	0 (0%)	0.09	3 (100%)	0 (0%)	0.32
	-	12 (60%)	8 (40%)		15 (75%)	5 (25%)	
pleura	+	2 (100%)	0 (0%)	0.26	2 (100%)	0 (0%)	0.39
	-	13 (62%)	8 (38%)		16 (76%)	5 (24%)	

Table III. Correlation between serum CA 15-3 and CEA levels at initial diagnosis of recurrence and number

Character		CA 15-3			CEA		
		Normal	Elevated	P value	Normal	Elevated	P value
ER	Negative	6 (33.3%)	7 (21.9%)	0.38	10 (32.3%)	3 (15.8%)	0.19
	Positive	12 (66.7%)	25 (78.1%)		21 (67.7%)	16 (84.2%)	
PR	Negative	5 (27.8%)	9 (28.1%)	0.98	10 (32.3%)	4 (21.1%)	0.37
	Positive	13 (72.2%)	23 (71.9%)		21 (67.7%)	15 (78.9%)	
HER-2	Negative	16 (88.9%)	23 (71.9%)	0.15	25 (80.6%)	14 (73.7%)	0.57
	Positive	2 (11.1%)	9 (28.1%)		6 (19.4%)	5 (26.3%)	
Ki 67	<14%	8 (44.4%)	13 (40.6%)	0.79	14 (45.2%)	7 (36.8%)	0.56
	>14%	10 (55.6%)	19 (59.4%)		17 (54.8%)	12 (63.2%)	