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Disease behavior and treatment response of special histological types of triple-negative breast cancer

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BACKGROUND

- Special histological types of triple negative breast cancer (TNBC) are heterogenous and poorly understood diseases (1, 2).
- This study aim to characterize the clinical features, disease behavior, treatment and outcomes of patients (pts) with special histological types of TNBC.

METHODS

- Retrospective cohort of pts with special histological types of TNBC treated from 2009 to 2020 at the *Instituto do Câncer do Estado de São Paulo*.
- Electronic records were reviewed for data collection.
- Comparisons of continuous variables between groups were done using one-way ANOVA, while categorical variables were compared using Chi-square test or Fisher exact test. Kaplan-Meier and Cox regression were used for survival analyses.

RESULTS

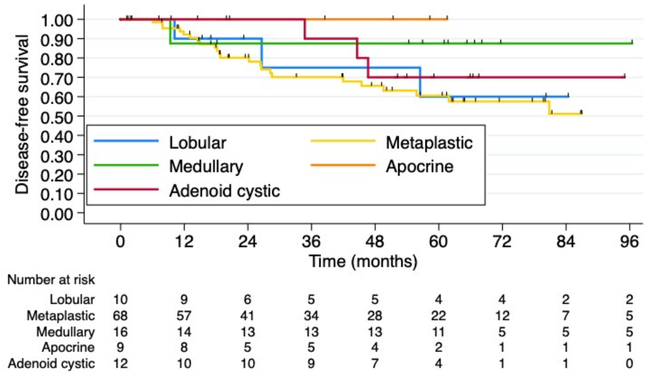
- 141 pts with TNBC special histological types were evaluated: 75 metaplastic, 16 medullary, 13 lobular, 13 adenoid cystic, 10 apocrine, and 14 other types.
- Among 125 pts with localized disease, 55 and 48 received neo- and adjuvant chemotherapy, respectively. 48 pts had metastatic disease at diagnosis or after recurrence.
- Median follow-up was 50 months.
- Clinical features and disease behavior differed importantly according to the special histological type (Tables 1 and 2).

Table 1. Patients' characteristics	Metaplastic (n=75)	Medullary (n=16)	Lobular (n=13)	AC (n=13)	Apocrine (n=10)	P-Value
Age (median, range)	51 (22 – 83)	54 (34 – 74)	56 (28 – 84)	52 (40 – 78)	66 (46 – 90)	0.004
Stage at diagnosis (n, %)						0.035
I-II	34 (45.3%)	10 (62.5%)	5 (38.5%)	10 (76.8%)	6 (42.8%)	
III	34 (45.3%)	5 (31.2%)	5 (38.5%)	1 (7.7%)	3 (21.4%)	
IV	4 (5.3%)	1 (6.2%)	3 (23.1%)	1 (7.7%)	4 (28.6%)	
Grade (n, %)						<0.001
1	0 (0%)	0 (0%)	1 (7.7%)	5 (38.5%)	1 (10%)	
2	17 (22.7%)	1 (6.2%)	3 (23.1%)	6 (46.1%)	6 (60%)	
3	56 (74.7%)	14 (87.5%)	9 (69.2%)	2 (15.4%)	3 (30%)	
Ki67, % (median, range)	70 (20 – 100)	55 (5 – 95)	58 (6 – 90)	25 (10 – 7)	20 (5 – 70)	<0.001

Table 2. Treatment and outcomes	Metaplastic	Medullary	Lobular	AC	Apocrine	P-Value
Localized disease	**(n=68)**	**(n=16)**	**(n=10)**	**(n=12)**	**(n=9)**	
Response to neoadjuvant CT (n, %)						<0.001
Complete response	4 (12.5%)	7 (100%)	2 (33.3%)	0 (0%)	0 (0%)	
Partial response	16 (50%)	0 (0%)	1 (16.7%)	2 (50%)	0 (0%)	
Stable disease	4 (12.5%)	0 (0%)	0 (0%)	1 (25%)	2 (100%)	
Progressive disease	7 (21.9%)	0 (0%)	1 (16,7%)	1 (25%)	0 (0%)	
Disease recurrence (n, %)	23 (33.8%)	2 (12.5%)	3 (30%)	3 (25%)	0 (0%)	0.221
5y-DFS rates (%)	60%	87%	60%	70%	100%	0.208
Metastatic disease	**(n=30)**	**(n=2)**	**(n=5)**	**(n=4)**	**(n=1)**	
1st line CT (n, %)						0.038
Platinum-based	16 (61.5%)	2 (100%)	0 (0%)	1 (100%)	NA	
Taxane	1 (3.8%)	0 (0%)	3 (100%)	0 (0%)		
Anthracycline-based	3 (11.4%)	0 (0%)	0 (0%)	0 (0%)		
Other	6 (23.1%)	0 (0%)	0 (0%)	0 (0%)		
Median PFS, months	4.3 mo	6.1 mo	6.1 mo	NR	NA	0.110

Abbreviations: AC, Adenoid cystic; CT, chemotherapy; DFS, disease-free survival; PFS, progression-free survival; NR, not reached; NA, not applicable. .

Disease-free survival (Kaplan-Meier curve)



Number at risk

Lobular	10	9	6	5	5	4	4	2	2
Metaplastic	68	57	41	34	28	22	12	7	5
Medullary	16	14	13	13	13	11	5	5	5
Apocrine	9	8	5	5	4	2	1	1	1
Adenoid cystic	12	10	10	9	7	4	1	1	0

CONCLUSIONS

- Our data confirm that TNBC has diverse disease behavior, response to chemotherapy, and oncologic outcomes according to histological type.
- A better comprehension of special types' biology and molecular features is urgently needed for the development of personalized therapy.

References

1. Ishikawa Y, et al. Cancer Sci. 2011;102(3):656-62.
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