Clinicopathologic Features and Outcomes of Breast Cancer in Young Women Treated at a National Oncology Institute in the Dominican Republic

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Background

Breast cancer in women aged ≤40 years represents a small but clinically significant proportion of cases (5–10%) and is consistently associated with aggressive tumor biology, higher grade, and poorer survival compared with older women (1,5–7) Early diagnosis remains challenging due to the absence of screening recommendations in this age group, especially in low- and middle-income countries, leading to advanced-stage presentation (2). Despite these known risks, evidence from Latin America and the Caribbean is extremely limited, and no prior reports have characterized the clinical presentation or outcomes of young women with breast cancer in the Dominican Republic. Generating local data is essential to inform cancer control strategies and improve access to timely and effective therapies.

Introduction

Young women with breast cancer represent a distinct clinical subgroup characterized by unique biological, reproductive, and psychosocial challenges (1,5–7).

Their under-representation in clinical trials has limited the understanding of disease behavior and treatment response in this population (4,6). Although aggressive tumor subtypes and advanced-stage presentation are well documented globally, little is known about how these patterns manifest in low- and middle-income settings, where delayed diagnosis and restricted access to targeted therapies may further worsen outcomes (2).

No studies to date have characterized the clinicopathologic features or survival outcomes of young women with breast cancer in the Dominican Republic. Generating local evidence is crucial for guiding early detection strategies, optimizing systemic therapy, and informing national cancer control initiatives.

Methods and Materials

Study design: Retrospective observational cohort.
Period: January 2015 – December 2020.
Population: Women aged 18–40 years with histologically confirmed breast cancer.
Objectives: Describe the clinicopathologic characteristics and survival outcomes, determine the distribution of molecular subtypes and stages at diagnosis and treatment patterns, evaluate recurrence rates and patterns of metastasis and estimate 5-year DFS and OS stratified by molecular subtype.
Statistical analysis:
Descriptive analysis using frequencies and percentages. Survival estimated using Kaplan–Meier curves, stratified by stage and molecular subtype.

Results

Young women (≤40 years)	represented 22% of all breast cancer cases.
Median age at diagnosis	35 years
Median DFS	5.6 years
Median OS	5.7 years

Table 1. Key findings

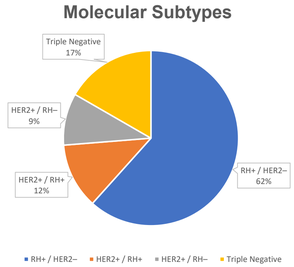
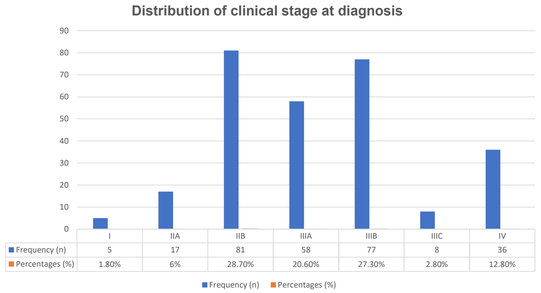


Figure 1. Molecular Subtypes



	I	IIA	IIB	IIIA	IIIB	IIIC	IV
Frequency (n)	5	17	81	58	77	8	36
Percentages (%)	1.80%	6%	28.70%	20.60%	27.30%	2.80%	12.80%

Figure 2. Distribution of clinical stage at diagnosis

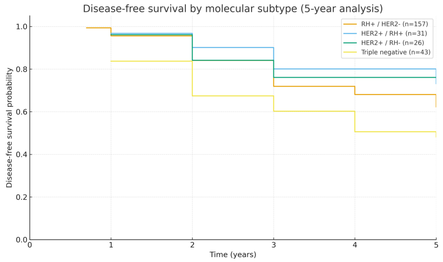


Figure 3. Five-year disease-free survival by molecular subtype

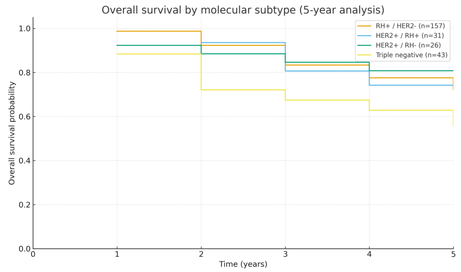


Figure 4. Five-year overall survival by molecular subtype

Discussion

Young women in this Dominican cohort showed a disproportionately high burden of advanced disease, reflecting global patterns of aggressive tumor biology and delayed detection in this age group. Over one-third had HER2+ or triple-negative tumors, consistent with high-risk molecular profiles described internationally.

Despite frequent use of multimodal therapy, one-third of patients developed recurrence, mainly distant metastases. Limited access to anti-HER2 therapy—received by only half of HER2+ cases—likely contributed to poorer outcomes, given the proven survival benefit of trastuzumab-based treatment. Five-year DFS and OS varied markedly across subtypes, with the poorest outcomes in triple-negative disease.

These findings highlight structural challenges in LMICs, including absent screening for young women, late presentation, and restricted access to targeted therapies—factors that collectively worsen survival in this population.

Conclusions

Young women with breast cancer in the Dominican Republic frequently presented with advanced-stage disease and a high proportion of aggressive molecular subtypes. Despite widespread use of multimodal therapy, limited access to anti-HER2 treatment and the predominance of high-risk tumors contributed to substantial distant recurrence. Five-year DFS and OS varied notably across subtypes, with triple-negative tumors showing the poorest survival. These findings highlight the combined impact of aggressive biology, late presentation, and restricted access to targeted therapies, underscoring the need for earlier diagnosis and improved treatment availability in LMIC settings.

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