Evaluation of the quality of the breast cancer program of the Hospital de San Juan de Dios in Cali - Consultorio Rosado

Evaluación de la calidad del programa de cáncer de mama del Hospital de San Juan de Dios de Cali – Consultorio Rosado

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Abstract

Introduction: In Colombia, breast cancer is considered a public health problem, it is the most frequent in women. To address this problem, WHO proposed to develop promotion and prevention programs, guaranteeing detection Early and timely treatment. These programs require continuous evaluation and improvement in their different stages of development, with the aim of guaranteeing quality in health care.

Objective: Evaluate the quality in terms of process and results indicators of the "Pink Office" program of the Hospital of San Juan de Dios, in the care of patients with breast cancer in Cali Colombia, 2017-2018

Methods: An observational, descriptive, longitudinal and retrospective study was conducted in patients diagnosed with breast cancer. Information from 329 clinical records and data reported by the Hospital of San Juan de Dios de Cali to the Epidemiological Surveillance System (SIVIGILA) by breast cancer diagnosis was analyzed. The indicators defined by the Cuenta de Alto Costo were calculated.

Results: The evaluation showed compliance in six of the twelve indicators of the CAC, and percentage of performance of conservative surgery (cuadrantectomy) in patients with in situ and infiltrating stage, cancer detection in state in situ, biopsy prior to surgical procedure, palliative care assessment.

Conclusion: It is considered imperative to improve the clinical record and reduce barriers to access diagnostic and treatment services to ensure timely care and improve the prognosis of patients with this pathology.

Resumen

Introducción: En Colombia, el cáncer de mama es considerado un problema de salud pública, es el de mayor frecuencia en las mujeres. La OMS propuso desarrollar programas de promoción y prevención, garantizando detección temprana y tratamiento oportuno. Estos programas requieren evaluación y mejoramiento continuo en sus diferentes etapas de desarrollo, para garantizar la calidad en la atención en salud.

Objetivo: Evaluar la calidad del programa "Consultorio Rosado" del Hospital de San Juan de Dios, en la atención de pacientes con cáncer de mama usando indicadores de procesos y resultados.

Métodos: Se realizó un estudio observacional, descriptivo, longitudinal y retrospectivo en pacientes diagnosticados con cáncer de mama. Se calcularon los indicadores definidos por la Cuenta de Alto Costo.

Resultados: Se analizó información de 329 registros clínicos reportados por el Hospital de San Juan de Dios de Cali al Sistema de vigilancia epidemiológica (SIVIGILA) con diagnóstico de cáncer de mama. La evaluación mostró cumplimiento en seis de los doce indicadores de la Cuenta de Alto Costo, contemplados en la evaluación de la calidad, estos fueron: porcentaje de realización de cirugía conservadora (cuadrantectomía) en pacientes con estadio in situ e infiltrante, detección de cáncer en estado in situ, biopsia previa a procedimiento quirúrgico y valoración por cuidado paliativo.

Conclusión: El programa cumple con el 50% de los indicadores. Es necesario mejorar el registro clínico y reducir las barreras de acceso a los servicios de diagnóstico y tratamiento para garantizar una atención oportuna y mejorar el pronóstico de las pacientes con esta patología.

Key study facts

Objective	To evaluate the quality of the "Consultorio Rosado" program of the San Juan de Dios Hospital for the care of patients with breast cancer using process and result indicators.
Study design	Evaluation of quality indicators of the care program for patients with breast cancer, through a retrospective longitudinal descriptive observational study
Source of information	Medical records from the computer application REDSALUD, SIVIGILA 329 clinical records
Population/sample	Eight general indicators, three opportunity indicators and one lethality indicator were determined. All the indicators had three levels of numerical qualification with traffic lights
Statistical analysis	The program complies with 50% of the indicators when compared to the indicators proposed by the High-Cost Account
Main findings	5/12 indicators showed compliance: the percentage of conservative surgery (quadrantectomy) in patients with in situ and infiltrative stage; detection of cancer in the in situ stage; and biopsy prior to surgical procedure and assessment for palliative care.

Introduction

Within chronic non-communicable diseases, cancer is a highly prevalent pathology and is considered a public health problem worldwide. In 2018, across the world, around 18.1 million people presented, for the first time, with cancer and 9.6 million people died from this cause (1). Breast cancer is the most commonly diagnosed type of cancer in women worldwide (24.2%) and it is also the leading cause of cancer death in women (15.0%) (2). In Colombia, 101,893 cases of cancer were registered in 2018, of which 54,017 (53%) occurred in women. Mortality from this disease is considered very high in Colombia, with a total of 46,057 deaths. Breast cancer is the most common type of cancer among women with 13,380 new cases (13.1%). In mortality, it ranks third with 3,702 deaths (8.0%) (2).

To address this problem, the WHO proposes the development of promotion and prevention programs for early detection and timely treatment. These programs require continuous evaluation throughout their different stages of development in order to guarantee quality in health care and to obtain an estimation of their true impact (3). In Colombia, the ten-year plan for cancer control 2012-2021 (4) and the High-Cost Account (5) have defined a maximum opportunity indicator of 30 days for diagnosis and a maximum of 30 days for treatment, being ratified by the routes comprehensive health care services (RIAS) for breast cancer (6).

The objective of a national cancer program should be to improve detection measures and make diagnoses in the earliest stages, based on education for self-examination, mammography as screening, and establishing appropriate, timely, and quality treatments with a view to improving the survival of women with breast cancer (7). This is why the evaluation of a program must consider the care processes that are established under the national guidelines for oncology programs. These include the Ten-Year Plan for Cancer Control in Colombia (2012-2021), which raises the need to implement cancer control through guaranteeing quality for screening services and guaranteeing timely access to diagnosis and treatment for breast cancer and setting goals and actions to achieve these goals (4). The High-Cost Account, through its Consensus of Indicators in breast and cervical cancer (5), where the objective is to prioritize indicators to measure risk management (early detection, definitive diagnosis, staging, treatment, follow-up and rehabilitation) is directed specifically to patients with breast cancer (4,5). These indicators are grouped into general indicators, indicators of opportunity and results (lethality).

Due to these recommendations, we set out with the objective of evaluating the quality of care of the Consultorio Rosado Program of the San Juan de Dios Hospital - Cali (HSJD-CR) in patients diagnosed with breast cancer during the years 2017 and 2018.

Methods

Type of study

The evaluation of quality indicators of the care program for patients with breast cancer was carried out through a retrospective longitudinal descriptive observational study.

Source of information

The main source of information was the medical records of the REDSALUD computer application which was used in the San Juan de Dios Hospital in Cali, in its Consultorio Rosado program, for the period 2017 and 2018. This information was consolidated through the Office of Statistics and Records.
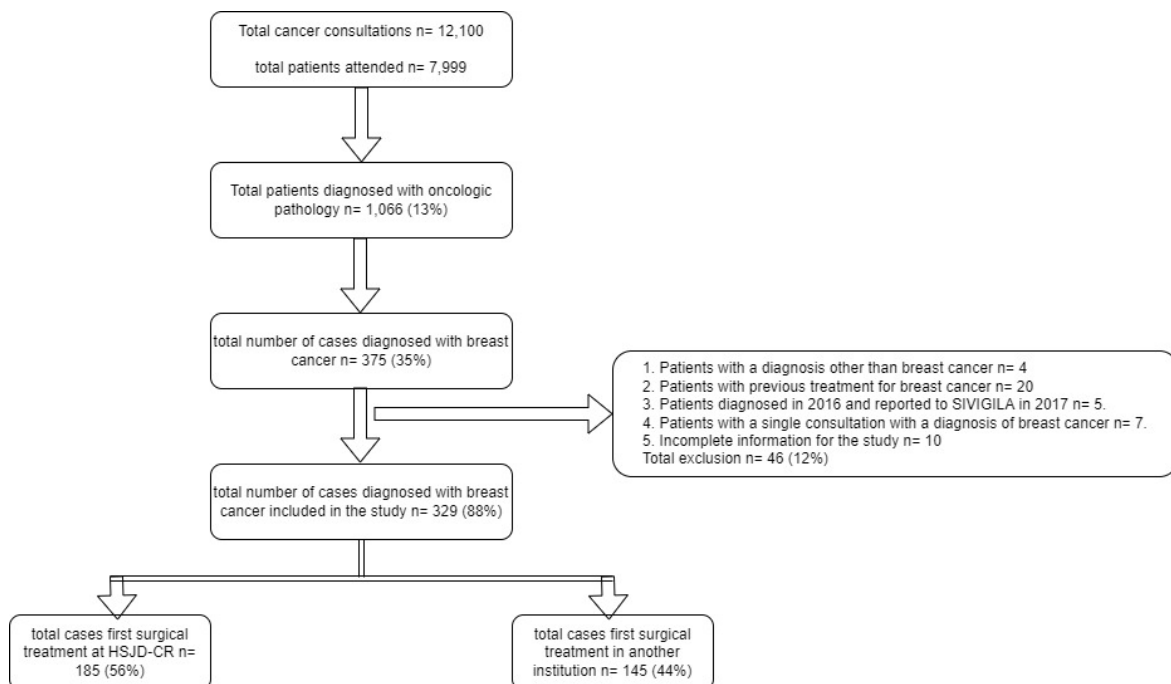

Figura 1. Diagrama identificación de las pacientes con cáncer de mama del HSJD-CR 2017-2018.

Study area

The research was carried out at the San Juan de Dios Hospital Foundation which provides health services of medium and high complexity, which mainly serves the vulnerable population and which is included in the public network of Cali. The hospital has the following services: emergency, external consultation, intensive care units for adults, and intermediate care for adults and pediatrics. It offers hospitalization services with 175 beds and has a surgery with 8 operating rooms. It has around 122,226 patient admissions annually.

The "Consultorio Rosado" comprehensive care and follow-up program was created in 2013, attached to the San Juan de Dios Hospital Foundation. This program's mission is to provide access, in an expeditious manner and without administrative procedures, to the entire consulting population regardless of socioeconomic status, social security regime and Benefit Plan Management Company (EAPB).

The HSJD-CR offers evaluation to potential cases of cancer of any type, through consultation with an expert doctor, diagnostic aids and insurance management in poor uninsured patients. Those who have a confirmed oncological disease are offered a prioritized consultation with a specialist and comprehensive management is arranged with the insurer in the institution, via the hospitalization services, surgery and diagnostic follow-up and therapeutic aids, including palliative management.

Selection criteria

Records of adult women diagnosed with breast cancer who were enrolled in the HSJD-CR program during 2017 and 2018, were included. Records of patients with concomitant cancers, breast cancer recurrences, incomplete information, and patients with only one breast cancer were excluded.

Statistical analysis

Once the information was collected, a quality control was carried out through a sampling of 15% of the data, which was contrasted against the source documents. No inconsistencies were found in the data.

The quality of care was evaluated according to the mission and objectives of the HSJD-CR program and against the indicators proposed by the High-Cost Account (5). The tables were built using the fulfillment of the goals proposed by the High-Cost Account for each indicator and with the measurements determined for Colombia during the years 2016 and 2017 as a traffic light.

Eight general indicators were determined: three indicators of opportunity and one indicator of lethality. All the indicators had three levels of numerical qualification and a traffic light system was used for coding: green representing good compliance, yellow representing regular compliance and red representing poor compliance. The average indicators determined in the literature for Colombia in the years 2016 and 2017 were used as a comparison.

Ethical considerations

This research was approved as a risk-free piece of research by the Ethics Committees of the San Juan de Dios Hospital in Cali, according to Act CEIHSJ010-019 of 2019, and the Universidad Libre Cali, according to act of August 29, 2019. The authors state that they have no conflicts of interest.

Results

During the period January 1st 2017 and December 31st 2018, the HSJD-CR program offered 12,100 consultations to 7,999 patients for the diagnosis, confirmation and treatment of oncological diseases. Figure 1 shows the selection process of the medical records of the patients who met the inclusion criteria.

The average age of the 329 women was 57.5 ± 13.30 with 97.5% (323/329) coming from the department of Valle del Cauca, mainly from the city of Cali. The majority of women were from socioeconomic strata 1-3 (of 6) and the vast majority were from the subsidized regime, mainly from the Entity for the Administration of Benefit Plans (EAPB) EMSSANAR (Table 1).

General indicators

It was found that 109 cases (33.1%) had a TNM report. Of these 94 cases (28.6%) were completed correctly. Table 2 shows the staging of patients with breast cancer according to the TNM system (Table 2).

In all the cases included in this study, the pathology report of the breast biopsy was obtained prior to the first treatment and 184 cases (55.9%) underwent surgery. Of these women, conservative surgery was performed in 141 cases (42.1%), mastectomy in 43 cases (13.1%), and 145 cases (44.1%) did not have surgery as the first treatment at the institution. In 10 of the 19 patients who had in situ staging according to TNM, conservative surgery was performed; of the 74 women with infiltrative stages, conservative surgery was performed in 27 (36.5%) (Table 2).

It was found that of the 93 women with a TNM report, in 17 cases (5.2%), there was a medical order for palliative care. Of the 44 patients classified in advanced stage, 4 (9.1%) had a palliative care order. With this information, compliance with the indicators was determined (Table 3). Three indicators were in the green level, two in yellow and two in red.

Opportunity Indicators

Three indicators of opportunity were calculated, which were evaluated through the averages as indicated by the High-Cost Account. When evaluating the distribution of the data, however, the best comparator was found to be the median and so these results are added in Table 4.

The global opportunity was considered from the first consultation in the institution until the performance of the first surgical treatment, with an average of 170 ± 93 days (Median: 147 and IQR: 114 -211); in 90.8% of the patients, they were attended with an opportunity greater than or equal to 75 days, which corresponds to the red stripe in the traffic lights of the High-Cost Account.

Table 1. Sociodemographic variables of patients with diagnosis. of breast cancer. Consultorio Rosado 2017 -2018

Age (years)		
Media	57.5	ds: 13.3
	n	**%**
Municipality of origin		
Cali	239	72.6
Palmira	5	1.5
Buenaventura	3	1.3
Jamundi	2	0.6
Others	8	2.4
No data	71	21.6
Total	329	100
Socioeconomic strata		
1	32	9.7
2	66	20.1
3	74	22.5
4	1	0.3
5	2	0.6
6	1	0.3
No data	153	46.5
total	329	100
Social security system		
subsidized	314	95.4
contributive	5	1.5
Special	3	0.9
No data	7	2.1
Total	329	100
Benefit Plan Administration Entity		
Emssanar	277	84.2
Asmet	22	6.7
Coosalud	17	5.1
others	13	4.0
total	329	100

Timeliness in diagnosis was defined from the first consultation to the pathology report, presenting an average of 57 ± 34 days (Median: 48 and IQR: 33-70); 52.3% of the results of the pathology were received after 40 days, which corresponds to the red stripe in the traffic lights of the High-Cost Account (Table 4).

For "opportunity in treatment", this measurement was considered as the average number of days between the issuance of the pathology report and the first surgical treatment, which was 57 ± 34 days (Median: 102 and IQR: 74-147); 91.7% received the first surgical treatment after 45 days, placing them in the red zone of the traffic lights of the High-Cost Account (Table 4).

Table 2. Staging of breast cancer patients according to the TNM system, at HSJD-CR 2017-2018..

Stage	Frequency	%	Distribution
0	19	6	*in situ*: 19 (20.2%)
IIA	26	8	temprano 26 (35.1%)
IIB	17	5	
IIIA	20	6	infiltrante 74(78.7%)
IIIB	6	2	avanzados 48 (64.9%)
IIIC	1	0	
IV	4	1	
No Data	236	72	sin dato 236 (72%)
Overall data	329	100	

Outcome indicators (lethality)

When determining the global lethality in the 329 women with breast cancer treated in the HSJD-CR program, it was found, through statistical records held at the Secretary of Health of Santiago de Cali, that 31 patients had died during the study period, which corresponds to at an overall lethality of 9.5%.

Regarding the outcome indicators, it was found that none of the women with early infiltrative stage died (26 women; 0%) and of the 48 women classified as advanced infiltrative stages, 6 patients died (12.5%) (Table 5).

Of the 51 women who had been authorized to have their first surgical treatment performed in the institution, one death was reported during the study period, which corresponds to 2.0% of the lethality of the HSJD-CR program.

Discussion

This research evaluated the quality of care of the HSJD-CR in the management of breast cancer, through the indicators of general quality, timeliness and lethality.

General quality indicators

When considering the general indicators of the quality of care in patients diagnosed with breast cancer, treated at the HSJD-CR, this process begins with clinical staging according to the TNM system. This allows a classification of the extent of the disease which in turn guides surgical management and facilitates decision-making regarding treatment. It is considered an important indicator of the prognosis and survival of women. For its determination, different diagnostic tests must be performed: this is, therefore, an aspect that reflects the quality and comprehensiveness of health care (5).

The proportion of women with breast cancer who underwent TNM staging. In CAC, staging was reported in 91.7% of patients (5). In the present study, 93 records with TNM staging were found which corresponded to 28.3% (95% CI: 26%-31%). This is considered a breach of this indicator, with red traffic lights, placing the quality of the registry and the quality of care in a negative light. According to a study carried out in Argentina, patients diagnosed with

Table 3. General indicators in the population of patients with breast cancer treated at HSJD-CR 2017, 2017-2018.

Name	Numerator	Denominator	Cut-off point* 2016-2017	Colombia 2016 †	Colombia 2017 ‡	HSJD-CR+ %(n)	CI (%)
Proportion of women with breast cancer who underwent TNM staging	Number of women with breast cancer who underwent clinical staging (TNM)	Total number of women diagnosed with breast cancer	≥78.7%		91.7		26-31
			71.5%-78.6%	71.9		28.3 (93/329)	
			<71.5%				
Proportion of women with breast cancer detected as carcinomas in situ at diagnosis	Number of women detected as having carcinoma in situ at the time of diagnosis	Total number of women diagnosed with breast cancer with TNM	≥12%				18-27
			6%-11%	6.30%		20.4% (19/93)	
			<6%		5.70%		
Proportion of women with breast cancer detected as early invasive carcinoma at diagnosis	Number of women detected as having early stage invasive carcinoma at diagnosis	Total number of women diagnosed with invasive breast cancer	≥50%		51.40%		30-42
			42%-49%%	42%		35.1% (26/74)	
			<42%				
Proportion of women with breast cancer detected as advanced-stage carcinoma at diagnosis	Number of women detected as advanced-stage invasive carcinoma at diagnosis	Total number of women diagnosed with invasive breast cancer	<50%		48.60%		55%-72%
			50%-57%			51.6 (48/93)	
			≥58%	58.0%			
Proportion of women with histopathological diagnosis before at surgery	Number of women with histopathological diagnosis	Total number of women who underwent surgery	≥57%		82.3		100%
			36.8%-57.7%	40.7		100% (184/184)	
			<38.6%				
Proportion of women with breast cancer who underwent in situ breast-conserving surgery	Number of women with breast cancer in situ who underwent breast-conserving surgery	Total number of women with breast cancer in situ who received surgical treatment	≥90%				85%-97%
			70%-89%	78.3	77.4	90.9% (10/11)	
			<70%				
Proportion of women with breast cancer who underwent invasive breast-conserving surgery	Number of women with invasive breast cancer who underwent breast-conserving surgery	Total number of women with invasive breast cancer who received surgical treatment	≥65.4%		71.3		60%-76%
			18.9%-65.3%	54.7		36.5% (27/74)	
			<18.9%				
Proportion of women with breast cancer assessed for palliative care	Number of women with early-stage invasive breast cancer evaluated with palliative care	Total number of women with early-stage invasive breast cancer evaluated for palliative care	To be defined	7.0%	7.4%	0% (0/26)	0%
	Number of women with invasive breast cancer in advanced stages evaluated with palliative care	TTotal number of women with advanced-stage invasive breast cancer evaluated for palliative care	To be defined	9.3%	7.30%	9.1% (4/44)	1%-18%

Good	Regular	Bad	

* Cut-off point 2016-2017: Value of the indicator standardized by the consensus of the CAC for breast cancer and its traffic lights (5).
† Colombia 2016: baseline found by the CAC for the year 2016 in Colombia (8)
‡ Colombia 2017: baseline found by the CAC for the year 2017 in Colombia (8).
+ HSJD: Findings from the Hospital San Juan de Dios – Consultorio Rosado (2017-2018).

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Table 4. Indicators of opportunity in the population of patients with breast cancer treated at HSJD-CR, 2017-2018.

Name	Numerator	Denominator	Cut-off point 2016-2017*	Colombia 2016 †	Colombia 2017 ‡	HSJD-CR § Average	HSJD-CR § Median	HSJD-CR § Signaling
Timeliness of comprehensive care (time between the consultation for the presence of symptoms associated with cancer until the first treatment (days)	Sum of the days elapsed between the first consultation at the institution that made the diagnosis and the first surgical treatment	Total women diagnosed with breast cancer	≤60		91.7			4.6 (6/130)
			61-75					4.6 (6/130)
			>75	234	87.8	170	130	90.8 (118/130)
Timeliness of cancer care- diagnosis (time between the first consultation and diagnosis- reading of the pathology). (Days)	Sum of the days elapsed between the first consultation and the diagnosis (pathology reading)	Total women diagnosed with breast cancer	≤30					23.2 (61/263)
			31-45					23.6 (62/263)
			>45	171	58	57	48	52.3 (140/263)
Timeliness of cancer care- treatment (time between diagnosis- reading of the pathology- up to the first surgical treatment). (Days)	Sum of the days elapsed between the reading of the pathology and the first surgical treatment	Total women diagnosed with breast cancer	≤30		29.8			2.8 (4/144)
			31-45					5.6 (8/144)
			>45	63.5		119	144	91.7 (132/144)

Good	Regular	Bad

* Cut-off point 2016-2017: Value of the indicator standardized by the consensus of the CAC for breast cancer and its traffic lights (5).
† Colombia 2016: baseline found by the CAC for the year 2016 in Colombia (8)
‡ Colombia 2017: baseline found by the CAC for the year 2017 in Colombia (8).
+ HSJD: Findings from the Hospital San Juan de Dios – Consultorio Rosado (2017-2018).

Table 5. Outcome-lethality indicators in the population of patients with breast cancer treated at the HSJD-CR, 2017-2018.

Name	Numerator	Denominator	Cut-off point 2016-2017*	Colombia 2016 †	Colombia 2017 ‡	HSJD-CR + %(n)	HSJD-CR + CI (%)
Lethality in women with breast cancer	Number of women with breast cancer who died during the period - early stages	Total number of women diagnosed with breast cancer in the period -early stages	<1.3%			0 (0/26)	0%
			1.3%-2.0%	1.3%			
			>2%		2.5%		
	Number of women with breast cancer who died during the period - advanced stages	Total women diagnosed with breast cancer in the period -advanced stages	<4.4%	3.5%			
			4.4%-5.0%				
			>5%		6.6%	12.5 (6/48)	3%-22%

Good	Regular	Bad

* Cut-off point 2016-2017: Value of the indicator standardized by the consensus of the CAC for breast cancer and its traffic lights (5).
† Colombia 2016: baseline found by the CAC for the year 2016 in Colombia (8)
‡ Colombia 2017: baseline found by the CAC for the year 2017 in Colombia (8).
+ HSJD: Findings from the Hospital San Juan de Dios – Consultorio Rosado (2017-2018).

breast cancer and registered in the Institutional Tumor Registry of Argentina (RITA) from 2012–2016, a TNM report was found in 49.1% (n= 4,843; 2,380 /4,843) (9): this is a large difference compared to that found in the present study.

The proportion of women with breast cancer detected as carcinomas in situ at the time of diagnosis. This indicator evaluates the detection in non-invasive or infiltrating stages, and with it the structured population screening programs, reflecting the quality of management for the early detection and opportune initial treatment in this pathology (4). In the High-Cost Account in 2017, this indicator reached 5.7% with a standard of ≥12%; in the present study, we determined that 20.4% (95% CI: 18%-27%) of patients had cancer in situ, exceeding the standard set by the High-Cost Account (5). This indicator was therefore met with green traffic lights. Comparatively, according to the International Union Against Cancer (UICC) and the American Joint Committee on Cancer (AJCC), at the time of diagnosis, 6.8% of carcinomas in situ (stage 0) were found (10), a figure lower than that shown in the present study.

The proportion of women detected as carcinomas in invasive stages, early at the time of diagnosis, (stages I to II) in the staging of patients with breast cancer in the CAC was 51.4% (5). In the HSJD-CR it was 35.4% (CI 30%-42%) with this being considered a red traffic light with a gap in relation to the standard with the High-Cost Account, exposing deficiencies in the quality of care. For the International Union Against Cancer (UICC) and the American Joint Committee on Cancer (AJCC) at the time of diagnosis, however, 36.4% were obtained in early stages (I and IIA) (10), similar to the percentage found in the present study.

The proportion of women detected as carcinomas in invasive stages, advanced at the time of diagnosis, (Stages III to IV) in the staging of patients with breast cancer in the CAC was 48.6% (5). In the HSJD-CR, it was 51.6% (CI 55%-72%) which is considered a red traffic lights, which suggests deficiencies in the quality of care. For the International Union Against Cancer (UICC) and the American Joint Committee on Cancer (AJCC) at the time of diagnosis, 45.2% were obtained for patients diagnosed with advanced infiltrating breast cancer (IIB, IIIA, IIIB and IIIC) (10), a figure lower than that found in the present study.

In general, there is a very important variation in relation to the stage of cancer at the time of diagnosis, with early stages predominating in developed countries that have population education programs, mammography screening that covers the majority of the population at risk and with sufficient resources for comprehensive care of positive cases. In the present study, the majority of women diagnosed with breast cancer are in advanced stages which is due to both the lack of education and awareness about the disease in women, as well as the lack of access to health institutions for timely care delivery.

The proportion of women with histopathological diagnosis before surgery is an important indicator when considering that all malignant lesions must have histopathological confirmation before any therapeutic behavior is carried out (5). For the High-Cost Account, this indicator was 82.3% (8) and in the present study it was found that 100% of the patients had a pathology prior

to the first treatment: this is, therefore, considered a green traffic light. This indicator was compellingly met by the HSJD-CR, when compared to the standard proposed by the High-Cost Account. In Argentina, according to a report from the national registry of cancer in hospitals in Argentina, from 2012 to 2016, 91% of breast cancers were diagnosed by histopathological analysis (12).

The proportion of women with in situ stage breast cancer who underwent conservative surgery (quadrantectomy). The effectiveness of breast conservation surgery when used in conjunction with radiotherapy, in early stages, has been shown to be equal to or superior to mastectomy for cancer treatment, but with better psychosocial and aesthetic results (9). In addition, it has been associated with better survival rates (when used with radiotherapy), along with fewer complications and comorbidities (which are more frequently associated with mastectomy), because this is a less invasive procedure (10). In relation to conservative surgery performed on patients in the in situ stage, according to the High-Cost Account, the baseline in Colombia in 2017 was a minimum of 77.4% (8). In the present study, an estimate of 90.9% was obtained for this indicator which means that the Institution complies with the standard for the indicator: the traffic lights were therefore considered green.

The proportion of women with infiltrating breast cancer who underwent breast-conserving surgery. The High-Cost Account defined 71.3% as the baseline in Colombia for the year 2017 (8). In our study, we observed that Quadrantectomy was performed on 68% of the patients undergoing surgery at the HSJD-CR, which is considered a good indicator for the Institution, with green traffic lights, given that a standard of ≥65.4% is considered to be the goal in Colombia by the High-Cost Account.

The proportion of women with breast cancer evaluated for palliative care. For the High-Cost Account, the baseline in Colombia in 2017 was 7.4% and 7.3% (8), in early and advanced invasive cancer, respectively. In our study, an estimate of 23.0% was obtained, of all patients who were diagnosed with breast cancer who had a palliative care medical order. This is considered to be a good indicator for the Institution, with green traffic lights. Ideally, 100% of all patients with breast cancer should be considered the goal. This therapeutic aid should be implemented in all patients with breast cancer with the aim of improving quality of life, allowing a determination of whether the approach used with these patients has been comprehensive (4).

Timeliness Indicators

In another group of indicators, there are those related to the times of opportunity, diagnosis and treatment. RIAS (Comprehensive Health Care Routes), for example, sets as standard a value less than or equal to 30 days for diagnosis and for the start of treatment for breast cancer. The overall maximum period of care (for diagnosis and treatment) for these patients should be a maximum of 60 days (1).

According to a study carried out by the National Institute of Cancerology (INC), Colombia, in 2006 and 2007, in 1,106 women receiving treatment for breast cancer in Bogotá, the median time from the first consultation to diagnosis (reading of pathology) was

91 days (95% CI: 82-97 days; Range: 0.2-2,138) and the time from the first consultation (median) to treatment was 137 days (95% CI: 127-147 days; range: 6 to 2,147) (11). We can obtain the time from the reading of the pathology study to the first treatment from the difference between the two times.

The timeliness of global care is an indicator that includes the time (days) of diagnosis, staging and determination of therapeutic behavior until the initiation of the first treatment. For the High-Cost Account, the baseline in Colombia in 2017 (8) was 87.8 days. In the present study, an average of 170 days and a median of 147 days (IQR: 211-114) were estimated. According to a study carried out by the National Institute of Cancerology, Colombia, in 2006 and 2007 (n= 1,106) in women receiving treatment for breast cancer in Bogotá, the time from the first consultation to treatment was 137 days (median) (95% CI: 127-147 days, range: 6 to 2.147) (10).

This indicator was considered unfavorable for the Institution, so it was determined, through the traffic lights of the High-Cost Account and the INC study, that this warranted a red stripe. The determinants of this finding were considered to be the fragmentation of care, the barriers to access, the difficulties in the authorization process, the deficiencies in the opportunity to perform diagnostic tests, and problems related to treatment, amongst others including other aspects that patients face. This indicator reflects the comprehensive management of this pathology by insurance companies and providers (5).

The timeliness of diagnosis, which is understood as the time (days) between the first consultation for the presence of symptoms associated with cancer, until the date of reading the pathology. For the High-Cost Account, the baseline in Colombia in 2017 was 56.6 days (CI 54.2-59.2) (8) with a median of 30 days (IQR 15-65) (9). In the present study, a median of 48 days was estimated (n: 263; IQR: 32.5 – 69.5); the analyzed values ranged between 3 and 247 days, and so this is an indicator that the institution does not comply with, with red traffic lights.

Ideally, 30 days of opportunity for diagnosis should be considered as the goal for patients with breast cancer. In Argentina, in the study of women registered in the Institutional Tumor Registry, 50% of the women were treated between 9 and 66 days for diagnosis after the first consultation (9), a figure which is higher than that found in the present study. This indicator in the HSJD-CR is determined due to the fact that the biopsy and the processing of the pathology report are carried out by another provider and because the performance of specialized studies such as stereotaxic breast biopsy and magnetic resonance imaging are often difficult to authorize by the insurer which means there can be delays in the subsequent completion of the procedure.

The timeliness of treatment, understood as the time (days) between the date of reading the pathology until the performance of the first treatment, in this case, surgical. This, in particular, determines the patient's prognosis and is a benchmark for measuring the quality of care in this population (5). For the High-Cost Account, in 2017, this was 68.6 days on average (95% CI 67.0-70.3) with a median of 55 days (IQR 30-92) (9). The median we obtained was 102 days (n: 144, IQR: 74-146.8), which is considered bad for the Institution and which means a red traffic light. In the Argentine study, this

indicator was found to be between 9 and 81 days for starting the first cancer treatment after diagnosis. Ideally, 30 days for diagnosis should be considered a goal for patients with breast cancer. This indicator is lengthened in the HSJD-CR due to the administrative and labour problems in the HSJD-CR, which increase the times for scheduling surgery. It is also lengthened by the authorization times of the EAPB which can be prolonged. Like all patients who undergo medical procedures at the Institution, in order to be able to perform a surgical procedure, the patient is sent by their EAPB to other providers, who later, having no opportunity to perform the procedure, return with a guardianship order, to have the procedure performed in the HSJD-CR. This causes delay in this indicator and, more seriously, leas to a worsening of the quality of care of these patients. This indicator is considered poor for the quality of care.

Lethality in women with breast cancer. In 2017 for the High-Cost Account, a lethality was estimated for the early stage of 2.5% and in advanced stages of 6.6%. We estimate a lethality of 9.4% (CI 11%-17%) for all the patients in this study. It is considered that the indicators are not comparable since they are calculated using different subpopulations.

Limitations and strengths

Regarding the limitations of this study, differences were found in the management in the stages of diagnosis and treatment of patients, the introduction of new technologies and treatment procedures and the variability of cases, given the complexity of the pathology. Additionally, there were deficiencies in the quality of the data, obtained from the clinical history as a source of information. The percentage of missing data for certain variables is the main limiting factor of the results of this study, since this could lead to biased results. The findings do not, however, contradict those presented in the various other studies discussed, so it can be stated that the loss of data did not affect the validity of the results.

The future objective is to improve the quality of the records which will help to determine improvements that could be made to the execution of processes of the different actors within the system and their effects on the subject. The fragmentation of care causes the information to lose uniformity, due to the differences in the processes at each institution that intervenes in patient care. Lastly, the results obtained by the High-Cost Account can only approximate to, and be a reflection of, the reality of the care process, leading to weaknesses as observed in the report. Additionally, the registration of data from the High-Cost Account has only been functional for a few years of operation and for this reason it should be considered a source of data in formation.

The strengths of the present study include the inclusion of all the patients who met the inclusion criteria. This study was carried out by a multidisciplinary team (Physicians, Statisticians, Epidemiologists, Health Administrators) and additionally, there were standard comparators for Colombia.

Due to the above, the external validity should only be obtained for populations and sociodemographic environments similar to that of the present study.

Conclusion

Early detection, timeliness and the comprehensiveness of treatment are decisive in the prognosis and quality of life of these patients. The HSJD-CR is aware of these postulates and according to its social responsibility policy, carried out the first evaluation of the quality of care, resulting in the finding of a 50% level of compliance with the indicators when compared with the indicators proposed by the High-Cost Account. Of the 12 standards of the High-Cost Account that were compared with the present study, 5 of them showed compliance with the standard, corresponding to: percentage of performing conservative surgery (quadrantectomy) in patients with in situ and infiltrative stage; detection of cancer in situ state; biopsy prior to surgical procedure; and assessment for palliative care. The indicator for the proportion of women detected as carcinomas in advanced stages at the time of diagnosis is at an intermediate level of compliance, according to the High-Cost Account. The previous evaluation seeks to identify the indicators subject to an improvement plan for the clinical records to minimize the loss of information and reduce the barriers to access to diagnosis and treatment services, and thus guarantee timely care and improve the prognosis of patients with this pathology. It is imperative to manage actions with the EAPB to avoid the division of care. This evaluation will serve as a baseline for improvement plans, beginning with the improvement of medical records, diagnosis and treatment opportunities that will result in an increase in the life expectancy and quality of life of patients with breast cancer in the vulnerable population in this region.

Breast cancer represents one of the most frequent pathologies in the region and requires a growing number of clinical activities at the San Juan de Dios Hospital in Cali, which is a referral center for the Public Health Network for this pathology. From this perspective, the Institution considers breast cancer to be a public health problem.

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