Mexican Journal of Oncology
Gaceta Mexicana de Oncología

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PERSPECTIVE

How much more can the pandemic harm in the timely detection of breast cancer?

¿Cuánto más podrá dañar la pandemia en la detección oportuna de cáncer de mama?

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At the onset of the pandemic, given the lack of knowledge on the behavior of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection and its high mortality, international bodies issued recommendations to prioritize the care of cancer patients, with breast cancer being one of the neoplasms that had more changes, both in timely detection and in cancer treatment standard management. These guidelines are updated according to the evidence generated worldwide; however, screening for breast cancer in asymptomatic population is still considered a low priority activity[1].

Another recommendation in these guidelines has been non-urgent care promotion through telemedicine, a resource that not the entire population has, as it occurs in our country. The registry of coronavirus disease 2019 (COVID-19), carried out by the American Society of Breast Surgeons (ASBrS), identified that 6.2% of initial consultations occurred through telehealth, and that screening was stopped at some point during the pandemic in 94.9%[2].

Breast cancer screening has decreased, both due to the high risk of infection, since proper social distancing is impossible during the tests[3], and to the low priority given asymptomatic women during the pandemic. International bodies recommended screening interruption and resuming it at the conclusion of the pandemic; however, since there is no clear termination date, these screening programs have been irregularly reactivated. In some countries, such as Mexico, breast cancer screening did not meet the minimum requirements necessary for being a successful program[4], and the pandemic came to undo the achievements that had been obtained by having already identified the flaws in this national program.

Many countries interrupted screening programs for 1-6 months. The impact of this interruption, whether in well-structured or timely screening programs, will depend on the reestablishment of screening intervals, the type of tests for detection, and the target population to be screened[5].

In Taiwan, screening decreased by 35, 60, and 49% in the months of March, April, and May 2020 in comparison with the same months during the previous 3 years ($p < 0.005$), without the population with positive mammograms referred to specialized centers significantly decreasing in the same periods[6].

We do not yet know the real long-term repercussions of screening interruption. Mathematical models have been created that calculate breast cancer future incidence, diagnostic delays, and, in the longer term, mortality.

In Canada, using the OncoSim mathematical model, the repercussions of screening interruption for 3, 6, and 12 months were projected. If the interruption is for 3-6 months, the detection of cases will decrease by 7% and 14%, respectively, while the diagnosis of breast cancer in symptomatic patients will increase by 10%

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Date of reception: 04-03-2022
Date of acceptance: 07-03-2022
DOI: 10.24875/j.gamo.M22000233
Available online: 07-12-2022
Gac Mex Oncol. 2021;21(4):114-116
www.gamo-smeo.com

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and 19%, respectively. During the 2021-2029 period, more cases will be diagnosed at advanced stages and mortality will increase, with this increase being calculated to be 0.48% when screening is interrupted for 6 months. The longer the time without screening, the more advanced stages and higher mortality in subsequent years[7].

The Australian Policy1-Breast microsimulation model[8] also calculated the repercussions of screening interruption for 3, 6, and 12 months. When the interruption is for 12 months, the model projected a 10% difference in cancer diagnosis per 100,000 women, with 270 cancer cases being calculated for the 2020-2021 period and 296 cases for the 2022-2023 period. The diagnosis of tumors ≤ 15 mm was lower the longer the interruption time was, with 54% being estimated when the pause is for 3 months and 48% when it is for 12 months.

The Italian model calculated a decrease in breast cancer diagnosis at early stages and temporary losses of undiagnosed cases according to the interruption time, with 8125 cases being estimated when the interruption is for 3 months and 16,250 when it is for 6 months[9].

The United Kingdom also made estimates for the decrease in diagnosis at early stages and for the increase at more advanced stages, both with its own registries and in the Scottish population[5,10-12]. Diagnosis at Stage I in women with no screening interruption has been estimated to be 40.4%, with a decrease in this percentage being projected with longer interruption time, which was calculated to be 37.8, 31.4, 22.6, and 12.4% at Stage I when screening interruption is for 3, 6, 9, and 12 months, respectively. Similarly, a progressive increase in 5-year mortality was projected for incidental cases, which was 6.3% when the interruption is for 3 months and 71.5% with a 12-month interruption.

On the other hand, models have been used for strategies to resume the programs as soon as possible and minimize the impact of screening disruption on breast cancer early detection[13].

Mexico declared the health emergency later than other Latin American countries[14]. The conversion of hospitals, including tertiary care institutions, was a drastic but necessary measure for the care of infected patients, which caused for patients with other diseases to be referred to other care centers, many of them without the necessary specialties overwhelmed by a high demand and without appropriate resources. Unfortunately, when the institutions resumed their activities, some hospitals were recently converted again into COVID hospitals, generating again a search for specialized and appropriate care for pre-existing conditions in the population.

Changes in the care of breast cancer patients (treatment delay or interruption) occurred worldwide, with only 18% being affected in some countries,[15] while in others, the figure is not quantifiable due to lack of records. In Mexico, where health system transformation was undergoing important changes, the COVID-19 pandemic worsened the scenario, which reflected on delays in cancer treatment[16].

There are few records in Mexico on the repercussions of the pandemic. The High Specialty Maternity and Children's Regional Hospital in Monterrey, after the *Seguro Popular* (People's Insurance) termination and the onset of the pandemic, became a referral center for breast cancer in the State of Nuevo León. In the comparison of 1 year before and 1 year during the pandemic, they recorded a decrease in monthly appointments of 18%, a decrease in first-time appointments of 20%, a decrease in the percentage of surgeries with diagnostic intent (excisional biopsies), with those with curative intent being increased, a decrease in the performance of biopsies of 67% and complete interruption of screening with mammography[17].

With the purpose to reestablish screening procedures, in January 2021, 76 organizations led by the National Comprehensive Cancer Network (NCCN) and the American Cancer Society (ACS) joined together, since there was a significant increase in the number of not early diagnosed cancer cases and in treatment delays. The rationale for this change is that there is an evidence that screening saves lives[18].

At 2 years of the pandemic onset, the behavior of SARS-CoV-2 is better known; despite its mutations, protection has been improved both in patients and health personnel, vaccination has managed to reduce the severity of the disease, the population is recovering trust and has understood that healthcare should not be postponed. This pandemic has changed the world, especially in the way, we communicate and continue to advance with issues that are really essential; however, the fight against cancer, not only breast cancer, must continue for cancer treatments not be to delayed, which is why screening programs should be restarted as soon as possible.

So far, we can only make comparisons about before and during the pandemic, waiting for the time in which we can publish results comparing before, during, and after the pandemic, an event that may take a few years.

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