



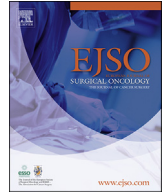
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Management of breast cancer patients during the peak of the COVID 19 pandemic



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During COVID 19 pandemic several recommendations were published which modified the standard guidelines advising a reduction in the use of chemotherapy, biological agents, and surgery in the treatment of breast cancer patients [1–4]. We analyzed how the senology program of the European Institute of Oncology, (IEO) in Milan, organized its activities during the peak of the pandemic (March–April 2020). We compared this data with that of the same period last year (March–April 2019) to evaluate the impact of the COVID 19 infection on the management of breast cancer patients. Categorical variables were reported as frequencies (percentages) and percentage differences between 2020 and 2019 were also provided. Differences between 2019 and 2020 were evaluated with Chi-squared test or with Fisher exact test. During March–April 2020 a total of 562 patients underwent surgery for breast cancer compared to 526 of the same period in the previous year. The number of patients from Lombardy was 244 compared to 155 in the same period in 2019. Of the 562 patients, 57 came from other hospitals in the region, which had been converted to COVID hospitals. Regarding the disease stage, a significantly higher percentage (90.6% vs 86%, $P = 0.05$) of invasive tumors were treated, as compared with previous years. Significant differences were observed also for reason of admission ($P < 0.01$): those admitted to surgery without a previous history of diagnosis increased (82% in 2020 and 79% in 2019) and a limited number of patients received contralateral prophylactic breast surgery (0.4% in 2020 vs 1.3% in 2019, $P < 0.01$). Furthermore, compared to previous year, more patients underwent to nipple-sparing mastectomy followed by immediate breast reconstruction with implant or tissue expander (152 vs 130). The most frequent molecular subtype was luminal B - HER2 negative disease (43% of invasive breast cancer in 2020 vs 41% in 2019), but the difference was not statistically significant ($P = 0.42$).

The total number of outpatient visits was 891 during March and April 2019 compared with 435 in the same period of 2020. Telemedicine and contact via telephone occurred 72 times during March and April 2019 compared with 752 during the peak of pandemic. Phone contact was accounted for 7.5% of the contacts

in the previous year, and increased to 48% during 2020. During March and April 2020, 870 patients were admitted to day hospital, compared to 983 of the same periods in 2019. The administration of weekly and bi-weekly therapy was slightly decreased compared to the previous year (–1.9%), and thus access to the day hospital was decreased. The lower number of accesses to the day hospital and of outpatients visits was also related to the reorganization of the pharmacy. Patients receiving oral, intramuscular or subcutaneous therapies, continued treatments via the delivery program set up in collaboration with our pharmacy for the first time. This was intended to avoid travel during the pandemic. During March–April 2020 a total of 207 shipments were done, 136 patients of Lombardy and 71 for patients from other regions of Italy.

The activities of the senology program of IEO during the peak of the pandemic continued without any substantial change in the management of breast cancer patients candidates to active therapies or surgery; the breast reconstruction was not delayed and, compared to previous year, more patients underwent to nipple-sparing mastectomy followed by immediate breast reconstruction with implant or tissue expander. Moreover, no breast cancer patients receiving chemotherapy or biological therapies died because of the COVID disease. These retrospective data show that it has been safe to continue active treatment for breast cancer patients even during the peak of the pandemic. In our experience, however, the pandemic significantly modified the management of patients receiving outpatient care. The use of telemedicine increased, allowing a continuation in the follow up of patients. Moreover, we were able to monitor the side effects of hormonal therapy or orally administered therapy. During the pandemic, telemedicine has improved access to care, thus decreasing health care costs. We are now involve in the vaccination program and all strategies that were successfully adopted during the COVID-19 infection have been maintained. It is likely that at least some of them will impact the way care is administered for years after the pandemic is over.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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