

## Brief Report

# New safer management for breast cancer patients who need neoadjuvant therapy during SARS-COVID pandemic

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**Abstract.** During the first hit of SARS-COVID pandemic, an important reorganization of Healthcare Services has been done, and new protocols and pathways to protect frail patients like oncological patients were designed. The second hit of pandemic had stressed these new pathways and suggests to health-workers some improvements for safer management of patents.

We reported our experience in organizing the clinical pathway of neoadjuvant therapy candidate patients based on the execution of sentinel lympho-node biopsy and the placement of implantable venous access port in the same access to operating room before neoadjuvant chemotherapy suggesting a possible organizational model. In the period October–December 2020 we have included in this new type of path twelve patients and we have not registered any cases of COVID among the patients included. We think this new path, adopted amid the second hit, will be useful for all Breast Units that are facing the challenge of guaranteeing the highest standards of care in a historical moment where the health emergency occupies the efforts of health workers and the economic resources of health systems.

Keywords: Breast cancer, COVID-19, patient's pathway, neoadjuvant therapy

## 1. Introduction

The SARS-COVID pandemic after the first outbreak in Wuhan and China has spread all the world with 61.036.793 confirmed cases, including 1.433.316 deaths as reported by the World Health Organisation (WHO) [1]. Europe was affected by a first hit at the beginning of pandemic between March and May 2020 and now all the continent is burdened by a second hit, with the disposition by each national government of national or local curfew or lockdown. Italy has 1.502.568 confirmed cases, including 51.114 deaths [2].

During the first hit, an important reorganization of the Italian National Healthcare Services has been done, and new protocols and pathways to protect frail patients as oncological patients were designed [3,4]. The second hit of pandemic had stressed these new pathways and suggest to health-workers some improvements for safer management of patents. This paper want illustrates how our Breast Unit had changed the hospital management of patients with breast cancer that undergo to neoadjuvant therapy before surgery.

## 2. Indication, staging and IVAP placement

Although originally developed for patients with advanced breast cancer, neoadjuvant chemotherapy (NACT) is now frequently administered to patients with operable tumors in an attempt to improve cosmetic outcomes and surgical sequelae. The main indications, as reported by AIOM [5] and NCCN [6] guidelines

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are: locally advanced breast cancer (stage IIB-IIIc [7]); early breast cancer (stage IA or IIA [7]) in cases where conservative surgery is not initially feasible due to, for example, a high breast cancer ratio or an expected suboptimal aesthetic outcome for a particular tumor location; patients with triple-negative carcinoma (TNBC) or HER2+ as they are particularly sensitive to therapies.

Furthermore, during first hit our breast cancer unit has adopted the routinely perform of immunohistochemical evaluation in women aged less than 45 years old or more than 80 years old extending the indications to NACT, particularly for younger than 45-year-old patients with HER2+ or triple-negative cancers and for older women with ER+ lesions, in order to guarantee delayed access to clinic and reducing waiting time for surgery. For the same reason we had standardize the execution of sentinel lymph node biopsy (SLNB) in clinical negative axillary patient before the NACT [8–11]: this choice leads us to have a study of the axilla not affected by therapy, accurate staging of the tumor and a saving of time in planning the radical oncological intervention due to a more precise surgical plan.

The administration of NACT through peripheral vein is a high-risk procedure for the severe effects in cases of extravasation of drugs, the consequent pain and psychological trauma [12]. For these reasons implantable venous access port (IVAP) with long-term central venous catheters (CVC) are commonly used in BC patients undergoing chemotherapy [13] and internal jugular vein or axillary vein/subclavian vein are commonly used for implantation.

The placement of the IVAP is an invasive procedure that is commonly performed with sedation and local anesthesia in an operating room: the outbreak of the pandemic has led us, intending to reduce access of cancer patients to the clinic to prevent the possible spread of the virus in these population subgroups, to combine the placement of the IVAP in the operating room with the execution of the sentinel lymph node biopsy before NACT. In our center, following the latest EUSOMA guidelines [14] on the organization of Breast Units, the decision on the type of therapy and the device to be implanted is made in the Multi-Disciplinary Team (MDT) on the advice of the oncologist. It appears evident that the positioning of IVAP compared to other external central venous catheters such as Peripherally Inserted Central Catheter PICC or non-tunneled CVC is burdened by a lower risk of infection and by a possibility of longer stay in the device also for a possible continuation of chemotherapy in the adjuvant setting.

Before pandemic we were led to organize at the time of diagnosis two distinct surgical paths, one for the immediate execution of the pre-NACT SLNB and only later in an outpatient regime the positioning of the IVAP with adjoining radiological correct placement, now taking full advantage of the possibilities of the operating room we perform in day surgery, with general anesthesia of minimum duration (about 45 minutes) both SLNB and implant of the IVAP and the immediate radiological control of the correct placement. This new combined approach to the patient allowed us during the pandemic to reduce the number of surgical procedures and consequently the number of hospital admissions from a minimum of three (SLNB, IVAP positioning and definitive surgery) to only two admissions, in patients anyway. screened for COVID-19 infection by nasopharyngeal swab performed no more than 48 hours before admission to hospital.

Candidate patients to enter this path are patients over 18 years of age, not pregnant, with breast cancer with the characteristics previously reported as optimal for performing a NACT, who accept entry into this type of therapeutic procedure and IVAP implantation.

In the period October–December 2020 we have included in this new type of path twelve patients of which 9 of the major stage of the IIB and three of the minor stage of the IIA, and among these only one patient (8.3%) interrupted the NACT for feedback to the exams. disease progression with subsequent decision by the MDT to send the patient for demolition surgery and subsequent adjuvant chemotherapy. The remaining eleven patients were all brought to surgery at the end of the NACT with restaging using Magnetic Resonance to adequately re-stage both the T and N parameters. There were ten sent to NACT at our center, but among these patients with advanced breast cancer appear to have been in a lower percentage than in 2020, probably due to diagnostic delays due to the outbreak of the first wave of the pandemic.

At the end of this first period during the second wave, having noted an effective reduction in hospital admissions and having not registered any cases of COVID among the patients included in this path, we decided to adopt it by default in patients with MDT indication to be systematically treated. To date, concomitant also the start of the COVID-19 vaccination campaign and the lock-down measures, none of our patients undergoing NACT in our third level center have been found to be positive for COVID-19 following the diagnosis of breast cancer.

### 3. Conclusion

We reported our experience in organizing the clinical pathway of NACT candidate patients to suggest a possible organizational model aimed at avoiding unnecessary access to hospitals, burdened by the effort to deal with the pandemic, amalgamating different services for a subgroup of patients defined as fragile and avoiding occasions of contagion. We think this new path, adopted amid the second hit, will be useful for all Breast Units that are facing the challenge of guaranteeing the highest standards of care in a historical moment where the health emergency occupies the efforts of health workers and the economic resources of health systems.

### Ethics approval

Ethical approval was not required.

### Conflict of interest statement

The authors have no competing interest to disclose.

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