Technical Note from the Brazilian Society of Oncology Pharmacists on Pharmaceutical Services Care in Oncology because of COVID-19 Pandemic

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Nota Técnica da Sociedade Brasileira de Farmacêuticos em Oncologia sobre Assistência Farmacêutica em Oncologia frente à Pandemia de Covid-19

Nota Técnica de la Sociedad Brasileña de Farmacéuticos en Oncología sobre Asistencia Farmacéutica en Oncología ante la Pandemia de Covid-19

Mario Jorge Sobreira da Silva[1]; Elaine Lazzaroni Moraes[2]; Annemeri Livinalli[3]; Cláudia Lara Fonseca[4]; Mayde Seadi Torriani[5]; Pablício Nobre Gonçalves[6]; Rafael Oscar Risch[7]; Ney Moura Lemos Pereira[8]

INTRODUCTION

Pharmacy services (PS) in oncology involves a set of activities that are essential to ensure the integrality, quality, effectiveness and safety of the care provided to the individual with cancer[1]. Thus, it is fundamental that the professional pharmacist is knowledgeable about the possible factors that can compromise the success of the treatment and adopt conducts to contribute to optimize the care in oncology.

In December 2019 in China, cases of an acute respiratory disease provoked by the novel coronavirus (2019-nCoV), called COVID-19 coronavirus disease 2019[2] were identified. On March 2020, the World Health Organization (WHO) declared that COVID-19 has become a global pandemic[3]. Ever since, professional pharmacists, worldwide, have been attempting to respond, act and adapt to continue the PS-related activities in oncology[4]. In that direction, the Brazilian Society of Oncology Pharmacists in (Sobrafo) issued a technical note with the objective of assisting the pharmacists to adopt conducts to be utilized in oncology services to maintain the quality of the care.

RECOMMENDATIONS

Studies have been demonstrating that patients with cancer are more vulnerable to the development of the severest form of COVID-19 because of the immunosuppression provoked by the baseline disease or still by the treatment performed[5,6]. Despite the identified risk, there are no evidences justifying the delays or interruptions of radiotherapy or systemic treatments such as chemotherapy, immunotherapy or hormone therapy in patients non-diagnosed with coronavirus[7,8].

The continuation of the treatments to oncologic patients during the pandemic, however, is challenging to the practice of the professionals and management of the care, requiring adjustments in the health institutions[4,9]. In the context of PS , several activities should be restructured in order to ensure the access, effectiveness and safety of the treatment[10-12].

The International Pharmaceutical Federation[3] and the Brazilian Federal Pharmacy Council[4] affirm that the pharmacists perform fundamental activities in the context of the pandemic, both at the outpatient or hospital while dispensing drugs and pharmacy activities.

[1] Pharmacist. Doctor in Public Health. Head of the Education Division of the National Institute of Cancer José Alencar Gomes da Silva (INCA). Director of the Brazilian Society of Oncology Pharmacists (Sobrafo). Rio de Janeiro (RJ), Brazil. Orcid iD: https://orcid.org/0000-0002-0477-8595
[2] Pharmacist. Doctor in Collective Health. Head of the Central Supply Service of INCA. Director of Sobrafo. Rio de Janeiro (RJ), Brazil. Orcid iD: https://orcid.org/0000-0002-7903-5550
[3] Pharmacist. Master in Pharmaceutical Sciences. Pharmacy Advisor of CF onco. Director of Sobrafo. Jundiaí (SP), Brazil. Orcid iD: https://orcid.org/0000-0003-2091-9113
[4] Pharmacist. Expert in Oncology Pharmacy. Coordinator of Cetus Hospital_Day Oncology. Director of Sobrafo. Belo Horizonte (MG), Brazil. Orcid iD: https://orcid.org/0000-0001-8699-1121
[5] Pharmacist. Master in Medical Clinic. Pharmacist of Clinic Hospital of Porto Alegre. Federal University of Rio Grande do Sul (UFRGS). Director of Sobrafo. Porto Alegre (RS), Brazil. Orcid iD: https://orcid.org/0000-0002-1948-7053
[6] Pharmacist. MBA Executive in Health Management Administration. Director of Pharmacy and Supply of AMO. Director of Sobrafo. Salvador (BA), Brazil. Orcid iD: https://orcid.org/0000-0003-0438-3275
[7] Pharmacist. Specialist in Oncology Pharmacy. Coordinator of Research of Inovamed Inovações e Tratamentos Médicos. Director of Sobrafo. Brusque (SC), Brazil. Orcid iD: https://orcid.org/0000-0002-9638-0671
[8] Pharmacist. Master in Biochemistry. Adjunct-Professor of the Department of Pharmacy of Federal University of Rio Grande do Norte. Director of Sobrafo. Rio Grande do Norte (RN), Brazil. Orcid iD: https://orcid.org/0000-0003-1792-3672
Address for correspondence: Mario Jorge Sobreira da Silva. Rua Marquês de Pombal, 125, 3º andar – Centro. Rio de Janeiro (RJ), Brazil. CEP 20230-240. E-mail: mario.cientifico@sobrafo.org.br

Therefore, Sobrafo attempted to systematize a set of recommendations addressed to the oncology pharmacist considering the activities associated to PC.

Selection of drugs and medical-hospital supplies

- Participate in the Pharmacy and Therapeutics Committee (PTC) of the definition of selection criteria of the drugs to be used in the treatment of COVID-19, considering the available scientific evidences.
- Contribute for the implementation of measures to promote the safe and rational use of drugs to treat COVID-19 in the institution.
- Participate of the elaboration of clinical guidelines and therapeutic protocols to use drugs to treat COVID-19.
- Collaborate in the definition of criteria to prescribe drugs under investigation or off-label drugs to treat COVID-19.
- Participate of the definition of criteria to rule the disclosure of drugs selected to treat COVID-19.
- Participate of the elaboration of the institution's pharmacotherapeutic guide.
- Establish contingency plans within the PTC in case of shortage of drugs and medical supplies (MS).
- Collaborate with the health providers to define alternative protocols whether shortage of antineoplastic, antimicrobial drugs, treatment supporting drugs and/or drugs for palliative care of patients with cancer occur.

Program for drugs and MS

- Verify with the healthcare team the possible impact of the pandemic because of COVID-19 over the routine of the treatment of patients with cancer (chemotherapy, surgery, radiotherapy), cancellations or new routines.
- Identify with the healthcare team which drugs/medical supplies will be more utilized during the pandemic, mainly those used in the protocols to treat the patients with confirmed COVID-19 and as life support for patients in more serious conditions.
- Revaluate the estimated quantity of drugs/medical supplies and the necessity of new purchase.
- Widen the time between inventory replenishment, if possible, to reduce the movement in the ware room and flow of individuals involved.
- Pay attention for potential impacts in the supply of drugs/medical supplies in the Brazilian market because of export and import restrictions during the pandemic.
- Report to the institution's PTC the probable reduction of the inventory because of shortage of a certain input in order to pursue viable alternatives with quality to reduce the potential impact on the treatments.

Purchase of drugs and MS

- Anticipate purchase demands with the vendors to keep the inventory because of the reduction of air transport of drugs/medical supplies during the pandemic and more time required for road transportation.
- Avoid in-person meetings and use video or web-conference to discuss with the vendors or with the team with more than ten members.
- Deliberate together with the institution direction about the purchase of drugs/medical supplies with possible price raises because of shortage caused by the pandemic.
- Be sure about the origin and technical-sanitary quality of the drugs and medical supplies to be purchased, verifying the sanitary status of the vendors and the brand offered.

Storage

- Limit the access of persons at the wareroom including administrative areas and inventory room.
- Evaluate the possibility of the administrative team to perform the activities remotely in order to reduce the number of persons in circulation.
- Provide surgical mask or face shield or cloth masks to the employees[15], if they do not have contact with the patient and guide them about the proper use during the working shift and while moving around.
- In case of contact with the patient, follow the current guidelines of the Brazilian Health Regulatory Agency (ANVISA)[15] and the local Hospital Infection Control Committee (HICC).
- Wear uniforms in-house instead of regular clothes that must be changed when the employee enters the premises. Uniforms should be cleaned daily.
- Stimulate the team to wash hands frequently with water and soap.
- Offer alcohol 70% gel for frequent hands hygiene, mainly after cargo loading/unloading.
- Offer 70% alcohol for hands cleaning close to the entry registry and avoid pen sharing, encourage each employee to use individual pens and calculators of their exclusive use.
- Avoid computers and telephone sharing – if inevitable, guide to clean the keyboard, mouse and telephone after use.
- Reorganize the activities shift to avoid employees to share specific garments to access the cold chambers, preferentially each employee should wear its own garment.
- Organize the routine to allow 2-meter distancing among employees (redefine team size or shift, review workflow).

- Limit to two employees (driver and assistant) the transportation of drugs/supplies in cars or cargo vehicles.
- Offer proper conditions for meals and organize different timelines to avoid agglomeration of employees in the cafeteria and restrooms (review team shifts and workflow).
- Establish with the cleaning team additional cleaning shifts of common areas and mainly, reception and separation countertop of drugs/medical supplies.
- Organize with the cleaning team frequent routine of cleaning furniture, transportation vehicles and equipment.
- Restrain the access of transporters and delivery employees to the reception area or evaluate the possibility of creating physical barriers to minimize personal contact.
- Demand employees of transporters and delivery services to wear surgical mask or face shield or cloth masks when entering the wareroom and during cargo loading/unloading.
- Limit drinking fountain and restrooms sharing with non-employees.
- Spray 70% alcohol if possible, in hard packages after receiving.
- Consider the possibility of organizing the quarantine area for all the products received for at least 72 hours for plastic packages and 24 hours for cardboard package.
- Keep drugs/medical-hospital supplies returned by the care areas to the warehouse in quarantine for at least 72 hours for plastic packages and 24 hours for cardboard packages[16], prior to verify whether they can re-enter the inventory. Wear masks and gloves to verify the conditions of acceptance to re-enter the inventory.

Distribution of drugs in hospital environment

- Ensure the therapeutic to the hospitalized patients, considering the possibility of some drugs starting to be distributed by stock replenishment (establish average use and batch replenishment).
- According to the defined flows, evaluate the possibility of not preparing single dose for the services of infected patients or suspected of infection through previous articulation with the services to avoid counterflow of return in cases of suspension or missed dose. In case the preparation is maintained, it must be ensured that the dose does not enter the patient room, that the drug withdrawn is not returned and that a segregated cleaning plan is defined.
- Identify and evaluate the necessity of reusing *versus* return or loss according to the level of criticality associated.
- Consider the increase of the drugs inventory at the clinical services/wards to minimize the pressure from the nurses and diminish the necessity of circulation of the professionals.
- Elaborate or review the hygiene plan of doses bins and transportation cars of all the services.
- Evaluate the level of urgency of the orders submitted to the pharmacy and define the time to collect the drugs at the pharmacy services, minimizing the circulation and access; priority services can be defined to avoid situations of waste of resources and errors in meeting emergency situations.
- Promote the use of electronic mean to request materials and drugs, among other, avoiding paper printing.
- While assessing the possibility of remote servicing through electronic applicative, some criteria must be complied with:
  - The pharmacists involved directly in the process of selection of drugs for patients in hospitals geographically remote must review new requests for drugs sent by fax or electronically to insert remotely new requests in the patient's electronic drug profile, approving remotely the drug requested for a patient or by a cost center.
  - The pharmacist should monitor the automated closet for drugs dispensation and supervise electronically the technicians while performing pharmacy operations.
  - Reference hospitals of difficult access and rural hospitals should develop, in addition to a workflow, common technologies to create an electronic record and monitor the dispensation and administration of drugs, improving the quality and safety of the process of caring for patients and medication.
  - The reality of this process can vary according to the availability of technologies involved in the hospital dispensation process.

Dispensing of drugs in outpatient pharmacy

- Evaluate the possibility of creating barriers as glass or plastic windows where the patients will be received.
- Use floor marks to indicate the safe distance persons are expected to keep in the waiting queue.
- Suggest times/schedule to receive the patients to reduce waiting time and agglomeration.
- Wear Personal Protective Equipment (PPE) and donning to receive the patient according to the current technical guidance[16].
- Organize and keep updated record with scientific-technical information of the drugs and medication available in the pharmacy in order to identify and

differentiate aspects related to the therapy as adverse events and drug interactions.
- Evaluate the possibility of home delivery of drugs to the patients.
- In case of delivery, the staff member should be instructed to maintain the quality of the drug being transported and prevention of individual and environmental contamination in case of accidents. The staff member responsible for the transportation shall: carry a spillage kit in case of accidents, keep individual protection measures and wear PPE according to the recommendations of the institution.
- Preferentially utilize electronic prescriptions or plastic bags for documents from out of the premises to minimize documents/paper sharing among patients and pharmacy staff.
- Establish workflow to avoid the staff member receiving the patient is not the same who have access to the drugs in the shelves.

Anticancer drug compounding

- Keep good clinical practices of compounding preparation of antineoplastic therapy.
- Ensure the proper functioning and maintenance of the physical infrastructure and equipment of the center of compounding manipulation of anticancer medication.
- Ensure the use of required donning in the process of compounding, including: apron or sterile overall (waterproof, long sleeve, collar and adjustable elastic cuffs, low particles emission, no front opening), two pairs of sterile gloves (latex, talcum-free), respiratory protection (disposable mask, reference PFF2/ N95), disposable overshoes or waterproof boot with anti-sliding sole and disposable cap or waterproof hood[17].
- Restrain the access to employees of the sterile compounding area, keeping at the least possible the number of professionals required to perform the activities.
- Perform thoroughly the procedures that ensure control, cleaning and disinfection of the area and equipment.
- Disinfect primary packages of the inputs that will be used during the preparation of the antineoplastic therapy.
- Evaluate with the clinical team potential modifications of protocols of treatment deemed necessary because of circulation restrictions, situations of medications shortage and/or patients clinical conditions.

Pharmaceutic follow-up of cancer outpatients

- Keep the pharmacotherapeutic follow up of cancer outpatients, preferentially through tele-medicine strategies (telephone or digital platforms).
- In cases of continuation of in-person activities, keep protection measures and wear PPE according to the recommendation of the institution or current rules.
- Evaluate the possibility of virtual follow up for which some criteria must be defined:
  - Keep physical and/or electronic register of the case.
  - Identify the following conditions considered risk factors for severe cases of COVID-19:
    - » age ≥65 years.
    - » Chronic preexisting pulmonary disease including among other, moderate to severe asthma.
    - » Cardiac disease with complications.
    - » Immune compromise (iatrogenic or physiopathological).
    - » Severe obesity (BMI> 40).
    - » Chronic kidney disease or kidney failure.
    - » Diabetes.
    - » Pregnancy.
- Establish the pharmacotherapeutic profile in the systematic follow-up of the patient through the elaboration, filling and interpretation of the pharmacotherapeutic files.
- In the pharmaceutical anamnesis, add in the follow-up file: anosmia (loss of smell), dysgeusia (loss of taste), fever (≥ 37.8 ºC), cough, shortness of breath, muscle pain, rhinorrhea, conjunctivitis, diarrhea, nausea, vomit and date of symptoms onset.
- Register whether the patient has already the result of any test for COVID-19.
- Refer the patient to COVID-19 care service according to the institutional referral protocol.
- Establish protocols of pharmacovigilance and technovigilance to ensure its rational use and therapeutic effectiveness.
- Guide the patient to contact a physician to evaluate the severity of the symptoms and next steps.
- Encourage the patient to keep in isolation at home and avoid propagating the virus.
- Guide the patient to seek for emergency support for severe respiratory difficulties.
- Instruct the family members and/or caretakers as applicable.
- Provide pharmaceutic orientation to clarify the patient about the relation risk-benefit, conservation and use of drugs and medications inherent to the therapy, its drug interactions and the importance of proper handling.

Activities of clinical pharmacy

- Keep the activities, whenever possible through tele-medicine strategies by telephone or digital platforms.
- Whether in-person activities continue, pay attention to protection procedures and wear PPE according to the institution's recommendations or current rules.

- Preferentially search clinical information about the patients through electronic chart.
- If in-person multiprofessional visits occur, keep the minimum 1-meter distancing among team members.
- Keep strategies of effective communication with the multiprofessional team and perform pertinent pharmaceutical interventions.
- Participate of the elaboration of essential protocols to provide care to patients with cancer diagnosed with COVID-19.
- Keep preventive actions of drug-related adverse events.
- Perform activities of pharmacovigilance, specially through active search and the incentive to report adverse reactions, identification of experimental therapies or use of off-label drugs and educative actions with the health team about drug-related potential problems.
- Keep activities of drug conciliation with support from the multiprofessional team to promote optimization of pharmacotherapy.
- Perform therapeutic monitoring activities of the patient, considering the particularities related to the treatment of COVID-19, watching specially for the following parameters: type of venous access and volume of the infusion of the drugs; drug incompatibilities; respiratory conditions and use of ventilatory support; routes of food intake and use of nutritional therapy; scale of pain and analgesic support; level of awareness and use of sedatives; glycemic control; hemodynamic stability; cardiovascular, hepatic and renal functions, pharmacotherapeutic risk and adverse reactions to drugs.
- Monitor patients with COVID-19 who are receiving the following therapeutic support: prophylaxis for venous thromboembolism (VTE), prophylaxis for stress ulcer; fluid therapy, inhalers, adapted pharmaceutical forms; antimicrobial empirical therapy, clinical research protocols and off-label drugs.
- Intensify the analysis and dissemination of information to the health team about potential drug interactions and incompatibilities especially in association to COVID-19-related treatments.
- Continue registering pharmaceutical evolution in the chart.
- Promote the realization of studies with medications.
- Analyze the impact of the modifications of treatment protocols of cancer patients because of the COVID-19 pandemic, survival and quality of life.

Clinical research

- Keep the consultations to the patients who are enrolled in clinical trials.
- Watch for protection measures and wear PPE as recommended by the institution.
- Keep at least 1-meter distance from the patient during the visit.
- Perform the activities whenever possible through telemedicine strategies.
- If the patient is diagnosed with COVID-19, evaluate the possibility of continuing the clinical trial.

Palliative care/home care

- Perform the activities whenever possible through telemedicine strategies.
- Keep continuous contact with the health team about the clinical conditions and maintenance of the patient treatment.
- Perform therapeutic monitoring activities of the patient, considering the particularities related to the treatment of COVID-19.
- If necessary, participate of the home visit, pay attention to protection measures and wear PPE as recommended by the institution or the current rules.
- Keep minimum distance of 1 meter from the patient during the visit.

CONCLUSION

In face of the scenario of COVID-19 pandemic, the pharmacist working in oncology can contribute substantially for the access, quality, effectiveness and safety of the care in this area. This attitude is related to its professional knowledge and materializes through the proper analysis of the situations, formulation of strategies, multiprofessional and interdisciplinary action and establishment of innovative strategies to ensure the safety and rational use of the drugs.

CONTRIBUTIONS

Mario Jorge Sobreira da Silva, Elaine Lazzaroni Moraes and Ney Moura Lemos Pereira contributed for the conception and/or design of the study, gathering, analysis and/or interpretation of data, wording and/or critical review. Annemeri Livinalli, Cláudia Lara Fonseca, Mayde Seadi Torriani, Pablício Nobre Gonçalves and Rafael Oscar Risch contributed for the conception of the study, interpretation of data and critical review of the note. All the authors approved the final version to be published.

DECLARATION OF CONFLICT OF INTERESTS

There is no conflict of interests to declare.

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