

Instant Journal of Hematology and Oncology

Review Article

Open Access

Cancer Management Practices during the Novel Coronavirus Disease 2019 (COVID-19) Pandemic

Tahseen Alrubai^{1*}, Arwa Mohsun Khalil², Samaa AL Tabbah³ and Rasha Zaki⁴¹Clinical Oncologist, Al-Amal National Hospital for Cancer Management, Baghdad, Iraq²Specialist Radiologist, Al-Amal National Hospital for Cancer Management, Baghdad, Iraq³Clinical Pharmacist, Lebanese American University, School of Pharmacy, Beirut, Lebanon⁴Clinical Oncologist, Al-Amal National Hospital for Cancer Management, Baghdad, Iraq

***Corresponding Author:** Dr. Tahseen Alrubai, Al-Amal National Hospital for Cancer Management Medical Director, Baghdad, Iraq, Email: tahseenalrubai@yahoo.com

Received Date: Apr 22, 2020 / **Accepted Date:** Apr 24, 2020 / **Published Date:** Apr 27, 2020

Abstract

The COVID-19 pandemic has significantly impacted the management, treatment, and delivery of care to cancer patients. This impact has extended beyond patient care to include logistics, administration, and distribution of increasingly limited health care resources in cancer management healthcare institutions. Based on the collaborative experience of the management, administration, and medical staff at AL-Amal National Hospital (a tertiary health care institution delivering cancer management and treatment services in Baghdad, Iraq), measures were taken and recommendations were carefully formulated to safely proceed with therapy for cancer patients amid the current COVID-19 Pandemic. We hereby review and present AL-Amal National Hospital's urgent plan to ensure that vital cancer services can still be delivered safely taking into consideration all the potential risks and benefits during this pandemic.

Keywords: COVID-19; Coronavirus; SARS-CoV-2; Cancer

Cite this article as: Tahseen Alrubai, Arwa Mohsun Khalil, Samaa AL Tabbah, et al. 2020. Cancer Management Practices during the Novel Coronavirus Disease 2019 (COVID-19) Pandemic. Int J Hematol Oncol. 3: 22-28.

Copyright: This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. Copyright © 2020; Tahseen Alrubai

Introduction

The outbreak of coronavirus disease 2019 (COVID-19) has rapidly spread globally since being identified as a public health emergency of major international concern and has now been declared a pandemic by the World Health Organization (WHO) [1]. The newly identified coronavirus, also known as severe acute respiratory syndrome coronavirus-2 (SARS-

CoV-2), is characterized by rapid human-to-human transmission [2]. It causes mild to moderate symptoms in most patients, who recover within a few weeks [3], but it is highly contagious and can cause severe illness or death, particularly in older patients or those with compromised immune systems, including cancer patients. For them, Covid-19 can be much more severe and more likely to be fatal. [4,5]. According to a special March 17

preprint report from the National Comprehensive Cancer Network, early reports out of China show that patients with cancer infected with Covid-19 have a 3.5 times higher chance of mechanical ventilation, ICU admission, or death compared with patients without cancer. As such, there is an urgent need to address the impact of such a pandemic on cancer patients. This includes changes in resource allocation, clinical care, and treatment options during this pandemic [6]. Currently and due to limited data, there are no international guidelines to address the management of cancer patients in any infectious pandemic. Therefore delivering cancer care during this crisis is challenging given the competing risks of death from cancer versus death or serious complications from SARS-CoV-2 in immunocompromised patients [7,8]. Many cancer patients are struggling to receive treatment due to hospitals canceling or delaying cancer management processes like chemotherapy and radiation therapy, surgeries, and other procedures. Moreover, patients with curable cancers that require timely implementation of surgery, chemotherapy, or radiation have regrettably concluded that the risk of contracting COVID-19 may be greater than the benefits of cancer treatment [9]. This rapidly expanding COVID-19 pandemic has impacted all areas of daily life, including medical care. Inadequate supplies of personal protective equipment (PPE) for health care providers, limited hospital capacity, including intensive care units (ICUs), and lack of point-of-care testing (POCT) further complicate the situation and increase the difficulty of cancer management [10]. Oncologists are acutely aware of the risks of their immunocompromised patients contracting Covid-19, but they are also aware that stopping or canceling chemotherapy, for many patients, could present more life threats. For all that, different measures are taken by different health care institutions to change and amend the management practices at their facilities. In this review we summarize the experience of AL –Amal hospital (a tertiary health care institution delivering cancer

management and treatment services in Baghdad, Iraq) in facing the potential challenges associated with managing its cancer patients during the COVID-19 pandemic, with suggestions of some approaches and management decisions to ensure the safe continuity of care at this hospital.

AL-AMAL NATIONAL HOSPITAL organizational structure

AL-Amal National hospital for cancer management (formerly known as Baghdad nuclear medicine & radiotherapy hospital) is a tertiary health care institution established in Feb, 1969 as the first dedicated oncology hospital in the region. It is located in Baghdad-Iraq, and it provides diagnostic, therapeutic as well as follow-up oncology services to patients with solid tumors. For the past 50 years it delivered oncology services to millions of Iraqis & Arabs who attended this old hospital during the late 1980's & 1990's. The hospital, with its 160 operating beds, 50 chairs for out-patient & inpatient chemotherapy services, and 14 palliative care beds, provides all the essential health services required to successfully carry out the cancer management process; from diagnosing the cancer patient, carrying out the necessary scans/tests, to initiation of the treatment/healing process. It houses 7 departments (Administration Department, Oncology Department, Nuclear Medicine Department, Radiology Department, Pharmacy Department, Nursing Department, Engineering Department) in addition to the Laboratory and Blood Bank units as well as 14 Oncology Clinics where the main patient load is there on a daily basis. Moreover, the hospital encompasses specialized physicians (nuclear medicine physicians and clinical oncologists), nurses, pharmacists, lab technicians, engineers, and administrative staff ensuring that each patient receives proper treatment and attention.

Patient load and normal daily workflow before Coronavirus pandemic

In the pre COVID-19 period admissions to the hospital counted to around 5000 to 6000 visits per week distributed as follows : +/- 300 patients/day (oncology clinics) , 200-250 patients/ day (nuclear medicine departement), 150 patients/day (radiology department), 120 patients/day (Radiotherapy), 250-350 Lab tests /day, based on a 5 days per week schedule. As for the patient admission procedure prior to COVID-19 period, the 14 outpatient clinics welcome the patients on daily basis, those who need chemotherapy are presented to a scientific committee to discuss the case and agree upon the protocols to be administered which are then recorded at a check desk. The treating oncologist admits the patient to the ward and the clinical pharmacist dispenses the medication where the nursing staff monitors the treatment delivery along with the resident doctors. If the patient needs radiotherapy, he or she is referred to CT simulation under direct supervision of the treating clinical oncologist who then starts contouring the tumor as per the international guidelines & writes the prescription dose. The final treatment plan is approved by the oncologist. The patient undergoes the radiotherapy treatment session under the supervision of the radiotherapy technicians and its monitored by his oncologist every 5 fractions. Finally the patient's health record is updated and the treatment plans, tests, reports, and the appointment of the next treatment session or next follow-up visit are all updated there. Under normal circumstances prior to the COVID-19 Pandemic, the hospital always ensured managing patients as per their normal protocols without delay in any treatments or follow-up tests required.

Coronavirus challenges and changes in managerial / medical practices during the COVID-19 pandemic.

As COVID 19 hit Iraq, AL-Amal National Hospital management started preparing for worst case scenarios. It was mandatory to implement a comprehensive list of preventive actions, to adjust the level of awareness and alertness among patients and healthcare staff, to secure adequate personal protective equipment (PPE) for health care workers, and to apply infection prevention and control measures at all the hospital levels and departments. The main aim of the hospital management was to issue recommendations for oncology practices to keep cancer patients, as well as their caregivers and health care staff, as safe as possible during the COVID-19 pandemic. In light of this challenging situation, protection and prevention measures for safe cancer management and administration of anticancer therapy were taken at the hospital at many levels: at the daily hospital infection control level, at the daily workflow process level and at the patient cancer management level.

The daily hospital infection control measures

Planning for an emerging infectious disease pandemic, like COVID-19, is critical to protecting the health and welfare of cancer patients under treatment, as well as the healthcare staff who are on the frontline facing this pandemic [11,12] AL-Amal National Hospital management developed a strategy to manage their space, staff, and supplies so that optimum safety and care is provided to the patients. In addition, a set of infection prevention measures and activities listed below were implemented to prepare for, respond to, and be resilient in the face of COVID-19.

1. Develop a pandemic safety plan and appoint one staff member to modify and update as required.
2. Deliver an education lecture for the hospital health care personnel relative to COVID-19 transmission, clinical course, at-risk populations, complications, treatment, prevention and control, social distancing, self-care, faily protection, and normal stress responses.
3. Start a patient awareness campaign about COVID-19 infection control at the hospital, the new hospital polices, infection prevention measures, COVID-19 transmission and its usual clinical symptoms, risk factors, and complications. This information was shared with the patients through information sheets and electronically via the hospital social media pages.
4. Equip all staff with daily personal protection equipment (PPE) like masks, surgical gowns, gloves, goggles, etc..., and they were educated about their proper uses.
5. Carry-out twice daily fogging for the whole hospital using diluted Clorox in a concentration of 1 part of Clorox to 9 parts of water, this included every touchable surface like desks, elevators doors, door knobs, bathrooms, etc....
6. Place Hand gel sanitizers and alcohol-based hand disinfectants everywhere (all departments, clinics, administration offices, etc....
7. Develop rescue plans in case of increased demand of resources or staff shortages, for example: respiratory care, nutritional support, pharmacy, laboratory, radiology, elective procedures.
8. Prepare guidelines for monitoring signs of illness (including self-reporting, self-quarantine, and start/end of shift evaluation).
9. Provide criteria for patient assessment and emphasis on cough/respiratory and hand hygiene as well as strict adherence to appropriate infection control precautions

per Centers for Disease Control and Prevention (CDC) guidance.

The daily inpatient/ outpatient/ visitor workflow process

Patients undergoing cancer care counseling, active treatment, and surveillance are highly exposed to medical centers, care providers, staff, and other patients. This results in a huge number of personal contact points and a large number of potential opportunities for viral transmission among both patients and caregivers [6,13-17] In light of that, AL Amal Hospital management created new daily inpatient/ outpatient/ visitor workflow process listed below to facilitate cancer patients' care in a safe environment, and to reduce the risk of viral transmission to healthcare workers and among patients as well.

1. Inform patients visiting the hospital for imaging, procedures, radiation therapy, or chemotherapy, lab tests, and face to- face visits to strictly take the usual precautions (masks, strict attention to hand hygiene, and hand gloves).
2. Take the body temperature of everyone entering the hospital (medical staff, patients, visitors).
3. Place Hand gel sanitizers and alcohol-based hand disinfectants at the hospital entrance.
4. Cancel non-urgent patient procedures or visits unless an urgent situation happens.
5. Ask visitors to reduce the number of visits to twice weekly (every patient should have only one companion if he/she is unable to walk or serve him or herself).
6. Minimize time in waiting rooms.
7. Rearrange patient contact areas to maximize social distancing.
8. Encourage phone visits rather than in-person clinic visits for non-urgent cases.

The patient cancer management process

Anti-cancer treatments such as chemotherapy can weaken the immune system, and potentially put patients at greater risk to Covid-19 particularly if they recently received or are continuing to receive treatment [18,19]. During these exceptional circumstances, difficult decisions about how and when to provide cancer treatment have become a necessity. Treatment decisions taken must balance the risk of cancer progression with delay of cancer care versus the risk for significant morbidity from COVID-19 [20]. Hospitals are making these decisions “on a case by case basis”. There is no single international standard that can be applied. Nevertheless, individual treatment decisions should consider factors such as the stage of the cancer, the specific type of chemotherapy they’re receiving, and the risk of cancer recurrence if treatment should be delayed [6]. Accordingly, AL-Amal Hospital management, oncologists, nurses, care teams, and hospital administrators have been working to address each patient treatment plan individually taking into consideration the following: the likelihood of cure or extension of life from the cancer treatments, the potential risks of delaying treatment, and the local incidence of coronavirus. Practical considerations listed below were taken by the hospital for safe administration of anticancer therapy in light of these disruptions. It is important to mention that these adjusting treatment plans were followed according to international cancer management guidelines.

1. Avoid procedures that would keep cancer patients in the hospital for a prolonged period for example: in the case of colon cancer the usual therapy given is (5-FU, Leucovorin, and Oxaliplatin) Intravenously over 46 hours. It was shifted to Xeloda oral treatment (two weeks on, one week off). So instead of giving a session every two weeks over 46 hours, it was adjusted to a 2 hours session every three weeks where the patient takes the

Xeloda and continues the treatment orally at home.

2. Decrease the number of visits to the hospital by shifting to oral treatment that can be taken at home, rather than injectable agents which requires administration at the hospital, for example, in advanced breast cancer or bronchogenic carcinoma the usual therapy of Navelbine IV was shifted to oral Navelbine tablet.
3. Reschedule the dose dense chemotherapy in breast cancer adjuvant setting (Adriamycine, Endoxan, and G-CSF (Neupogen) every two weeks) to (Adriamycine and Endoxan every 3 weeks).
4. Adjust some cancer treatment protocols by avoiding the administration of highly toxic agents, for example: in bronchogenic carcinoma the usual therapy is Gemzar /Carboplatine (day 1 - day 8), so it was adjusted by avoiding Gemzar on Day 8 due to its high toxicity.
5. In addition to potentially altering therapeutic protocols, other actions listed below have been taken by the hospital management to increase cancer patients’ safety.
6. Split the hospital senior staff as well as the nursing & administrative staff into a 50 percent shift (every other day working shift to reduce the time of exposure to the virus and decrease the risk on the healthcare workforce.
7. Limit the treatment in radiotherapy to urgent palliative radiotherapy including spinal cord compression and superior vena cava (SVC) obstruction as well as the adjuvant breast radiotherapy and Head & Neck treatment.
8. Minimize the number of patients examined at the radiology department.

At Al-Amal National Hospital, all the procedures and policies mentioned above were constantly monitored, communicated and updated by the management. This plan proved its success and till the date of writing this review, the hospital did not report any

COVID-19 case among the health care staff nor among the patients. This plan can be further demonstrated in (Table 1) which shows the result of these preventive measures taken where we can see a drop in the number of patients and procedures done in different

departments of the hospital during February and March 2020 as compared to the same period in the previous year 2019 when the hospital was operating under normal conditions.

Table 1: Number of patients, procedures, or visits at different departments of the hospital during February and March 2020 as compared to the same period in the previous year 2019.

Follow-Up or Treatment	February-March 2019	February-March 2020	% Decrease
The total number of chemotherapy sessions	4755	3820	-19.66 %
Number of radiotherapy fractions	645	448	- 30.54 %
Number of follow-up visits for nuclear medicine	2813	1567	- 44.29 %
Radiology department including conventional x-ray, ultrasound, CT scans, MRI scans, mammography	6726	5193	- 22.79 %
Laboratory tests	65989	62722	- 4.95 %

Conclusion

In this review, we summarized the current challenges faced and the changes implemented in managing cancer patients during the COVID-19 pandemic at AL –Amal Hospital for cancer management in Baghdad, Iraq. Protection and prevention measures for safe cancer management were taken at many levels: the facility level, the daily workflow process level and at the cancer patient treatment level in order to minimize the risk of Coronavirus infection spread among healthcare staff and patients. This approach proved its success at this hospital so far in terms of smoothly managing cancer patients and not recording any infected cases.

References

1. Director-General's remarks at the media briefing on 2019-nCoV on 11 February 2020. World Health Organization. .February 12, 2020). Ref.: <https://bit.ly/34XvQVe>
2. Naming the coronavirus disease (COVID-19) and the virus that causes it. World Health Organization. 4 April 2020.
3. Coronavirus Disease 2019 (COVID-19)-Transmission. Centers for Disease Control and Prevention.17 March 2020. Retrieved. 23 March 2020.
4. Zhang L, Zhu F, Xie L, et al. 2020. Clinical characteristics of COVID-19-infected cancer patients: A retrospective case study in three hospitals within Wuhan. China. Ann Oncol. Ref.: <https://bit.ly/2xRSWk2>
5. Interim Clinical Guidance for Management of Patients with Confirmed Coronavirus Disease (COVID-19). Centers for Disease Control and Prevention. 11 April 2020.
6. Ueda M, Martins R, Hendrie PC, et al. 2020. Managing Cancer Care During the COVID-19 Pandemic: Agility and Collaboration Toward a Common Goal. J Natl Compr Canc Netw. 1-4.
7. Yu J, Ouyang W, Chua MLK, et al. 2020. SARS-CoV-2 Transmission in Patients With Cancer at a Tertiary Care Hospital in Wuhan, China. JAMA Oncol. Ref.: <https://bit.ly/3av4reC>

8. Lewis MA. 2020. Between Scylla and Charybdis - Oncologic Decision Making in the Time of Covid-19. N Engl J Med. Ref.: <https://bit.ly/2Vt2Wcm>
9. Cannistra SA, Haffty BG, Ballman K. 2020. Challenges Faced by Medical Journals During the COVID-19 Pandemic. J Clin Oncol. JCO2000858. Ref.: <https://bit.ly/3eLIX08>
10. Emanuel EJ, Persad G, Upshur R, et al. 2020. Fair Allocation of Scarce Medical Resources in the Time of Covid-19. N Engl J Med. Ref.: <https://bit.ly/3cFzxxZ>
11. Wong J, Goh QY, Tan Z, et al. 2020. Preparing for a COVID-19 pandemic: a review of operating room outbreak response measures in a large tertiary hospital in Singapore. Can J Anaesth. Ref.: <https://bit.ly/2Ks4qNR>
12. COVID-19 Recommendations and Information (Daily Practice). 20 April 2020. <https://bit.ly/2XZGQQo>
13. Considerations relating to social distancing measures in response to COVID-19-second update. European Centre for Disease Prevention and Control. 24 March 2020.
14. Coronavirus disease (COVID-19) advice for the public: When and how to use masks. World Health Organization. Retrieved. 9 March 2020.
15. Coronavirus, Social and Physical Distancing and Self-Quarantine. The Johns Hopkins University, The Johns Hopkins Hospital, and Johns Hopkins Health System. 2020.
16. Guidance for the Selection and Use of Personal Protective Equipment (PPE) in Healthcare Settings. The Centers for Disease Control and Prevention (CDC). February 2020.
17. Latest information on COVID-19 and measures for prevention of spreading issued by the Government. Ministry of health (North Macedonia). March 2020.
18. COVID-19 Patient Care Information. American Society of Clinical Oncology (ASCO). April 02, 2020. Ref.: <https://bit.ly/2W5dM7N>
19. Xia Y, Jin R, Zhao J, et al. 2020. Risk of COVID-19 for patients with cancer. Lancet Oncol. 21: 180. Ref.: <https://bit.ly/2VQeTlj>
20. Kutikov A, Weinberg DS, Edelman MJ, et al. 2020. A War on Two Fronts: Cancer Care in the Time of COVID-19. Ann Intern Med. Ref.: <https://bit.ly/2KrnBYf>