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COVID-19

COVID-19—Impact on DNR Orders in the Largest Cancer Center in Jordan



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Abstract

The COVID-19 pandemic requires health care teams to rethink how they can continue to provide high-quality care for all patients, whether they are suffering from a COVID-19 infection or other diseases with clinical uncertainty. Although the number of COVID-19 cases in Jordan remains relatively low compared to many other countries, our team introduced significant changes to team operations early, with the aim of protecting patients, families, and health care staff from COVID-19 infections, while preparing to respond to the needs of patients suffering from severe COVID-Manage 2020;60:e87-e89. © 2020 American Academy of Hospice and Palliative Medicine. Published by Elsevier Inc. All rights reserved.

Key Words

COVID-19, DNR, cancer, KHCC

Current Situation in Jordan

At the time of writing, there have been 437 COVID-19 cases in Jordan, 318 patients have recovered, and seven patients have died (accurate on April 23). I Jordan is a middle-income country in the Middle East with a population of 10.5 million.² The majority (97%) of the population are Muslims and 2.2% of the population are Christians²; culturally, it is usual for generations to live together in the same house, and for hundreds to gather for social occasions such as weddings or funerals. These cultural dimensions bring an additional challenge to virus containment efforts.³

King Hussein Cancer Center

King Hussein Cancer Center (KHCC) is a not-forprofit, nongovernmental institution in Amman, providing adult and pediatric cancer care free of

charge to Jordanians. It is the largest tertiary cancer center in Jordan and currently treats around 60% of all cancer diagnoses in the country.⁴ There are 352 beds that operate on over 90% bed occupancy rate.

Preparation for COVID-19 was essential at KHCC, as almost all our patients have active cancer and are either receiving active oncological treatment or have advanced cancer under the care of the palliative care team and remain vulnerable for a severe or a fatal COVID-19 infection.

The ethics committee at KHCC (Table 1) called for an urgent meeting online to plan for a potential surge in COVID-19 cases. Given the impact of COVID-19 on health care systems in epicenters of the pandemic, planning was essential to determine how intensive care units (ICUs) and ventilation capacity at KHCC could be best utilized for our patients and to respond to critical cases of COVID-19 infections. The committee agreed on changes to the DNR policy which would

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be actioned at the time of increasing demand on ventilators from COVID-19 patients.

"Do-Not-Resuscitate" Orders in Jordan

Although euthanasia and physician-assisted suicide are illegal, DNR orders are ethically and legally permissible and practiced for terminally ill cancer patients in Jordan. Opting not to resuscitate in the context of terminal illness is considered acceptable by the Islamic and Christian religious leagues. A terminally ill cancer patient in the religious context of DNR is defined as any patient with metastatic cancer, having exhausted anticancer therapy, and having a progressive and incurable malignancy.^{5,6} The DNR decision needs to be made by three physicians who are in good standing with the Jordanian Medical Council and are all in agreement that cardiopulmonary resuscitation (CPR) will have no benefit in restoring the patient's health or curing the cancer^{5,6}; the patient and family must also be in agreement with the decision. Many, although not all, hospitals in Jordan have a DNR policy in place, although experience among clinical staff of implementing these is relatively low.

KHCC has had a DNR policy since 2005 for terminally ill cancer patients. At KHCC, a terminally ill cancer patient is defined as either a patient with a progressive metastatic cancer (either having exhausted all lines of oncological treatment or declined treatment) with an expected prognosis of less than six months or a patient with multiple-organ failure who is actively dying.^{7,8} Before referral to the palliative care team, the primary oncologist explores and documents the patient's preference regarding resuscitation. After referral to palliative care, the team routinely discusses goals of care with the patient and their family, which includes the patient's wishes for resuscitation. In Jordan, health care decisions tend to be family centered, rather than patient centered. It is common for patients to elect their family to receive health updates and make decisions regarding their care. Not all patients follow this "cultural norm," and as in every setting, our team must explore with every patient their preference for receiving information and decision making. These procedures have been developed to ensure that decision making reflects cultural preferences and practices.

Importantly, this approach means that the majority of patients and families receiving palliative care at KHCC understand and agree with reaching a DNR decision. In 2019, 483 of the 581 palliative care patients who died had a DNR order in place (83.1%).

Our Proposed Changes to DNR Policy

Patient-centered care, a core value of palliative care, needs to adapt during the pandemic to focus on

Table 1 Ethics Committee—King Hussein Cancer Center

Committee Chairman

- Consultant Surgical Oncology, Department of Surgery Members
 - Chairman, Department of Radiology
 - Chairman, Department of Anaesthesia and Pain Management
 - Consultant, Clinical Pathology
 - Manager, Emergency Department
 - Chief of Nursing
 - Clinical Pharmacist
 - Consultant, Neurology
 - Chief Section, Paediatric Palliative Care and Pain Management
 - Chairman, Department of Palliative Care
 - Director, Psychosocial Oncology Program
 - Legal Representative

Invited

• Chief Section, Pulmonary and Critical Care

community-centered care. In light of this, a decision was made by the committee to allow unilateral medical decision making regarding resuscitation for terminally ill cancer patients in the event of increasing demand on ventilators due to COVID-19 cases. The committee unanimously passed an amendment to the DNR policy to preserve ICU beds and ventilator support for patients with a good prognosis. The ethics committee agreed that any patient with metastatic disease and progressive cancer with a poor prognosis or patients with multiorgan failure with a poor prognosis would not be offered cardiorespiratory resuscitation. Poor prognosis was defined by the committee to be any patient with an estimated prognosis of less than three months, utilizing the oncologist's clinical prediction of survival, either by a temporal question ("how long does the patient have") or a surprise question ("will you be surprised if this patient dies within three months?").10 In addition, the palliative care team uses the Palliative Prognostic Index, a prognostic model to predict poor prognosis. 11 All decisions and rationale not to resuscitate must be communicated clearly and timely with the patient if possible, and with the family. 12 The patient and family must be reassured that compassionate care and symptom control will not be compromised.

Any patient or family member who refuse the medical decision for DNR would have the option of seeking care in a different institution.

Resuscitation and COVID-19

The COVID-19 pandemic is requiring hospital teams around the world to make difficult decisions regarding patient care. Some hospitals around the world have initiated a modification to their DNR policy for COVID-19—infected patients. ^{13,14} This is due to the risk CPR presents as an aerosol-generating procedure to health care professionals. ¹⁵ Protecting staff during resuscitation attempts would require full

personal protective equipment, including an FFP3 mask and facial protection, which would take between three and five minutes to apply, by which time the window to provide resuscitation may have been lost. ¹³ Hospitals in the epicenter of the pandemic can ill afford to lose precious health care staff to sickness. Furthermore, they have an ethical duty to protect their staff from contracting COVID-19.

These changes in practice pose some challenging ethical considerations. Should CPR be attempted on a patient suspected of but not yet proven to have a COVID-19 infection? If a patient has a reversible cause for arrest, such as correctable arrhythmias, should limited CPR be attempted? Do blanket DNR policies ease distress or add burden to the doctors working in epicenters of the pandemic?

Conclusion

While Jordan may be some weeks behind Western Europe and North America in terms of the number of cases, our hospital has put strategies and recommendations in place early with the aim of being better prepared to face the crisis. Palliative care is a critical component of the COVID-19 pandemic. Our aim is to be able to continue to provide palliative care for all in need during the pandemic and remain focused on decreasing suffering and relieving pain and other distressing symptoms for all patients at end of life. While doing this, we must continue to use limited resources—whether ventilators, doctors, or nurses—with the aim of providing the most utility, requiring some shift from patient-centered care toward community-centered care. This has required making difficult ethical decisions regarding resuscitation and access to ICU for our palliative care patients; the amendment to our DNR policy to allow unilateral medical decision making regarding resuscitation for terminally ill cancer patients was approved by our ethics committee and will be initiated, once there is a national or institutional declaration of ventilator shortage due to COVID-19. We recommend a similar approach when caring for terminally ill cancer patients, especially for countries with limited resources.

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References

- 1. Johns Hopkins University. Coronavirus COVID-19 global cases by the Center for Systems Science and Engineering. 2020. Available from https://coronavirus.jhu.edu/map.html. Accessed April 10, 2020.
- 2. The world fact book, Jordan. Available from https://www.cia.gov/library/publications/the-world-factbook/geos/jo.html. Accessed February 25, 2020.
- 3. Marketwatch. 'The fates of the refugees and their Jordanian hosts are intertwined.' what coronavirus means for Jordan and its Syrian refugee population. Available from www.marketwatch.com/story/the-fates-of-the-refugees-and-their-jordanian-hosts-are-intertwined-what-coronavirus-means-for-jordan-and-its-syrian-refugee-population-2020-03-25. Accessed March 28, 2020.
- 4. Shamieh O, Hui D. A comprehensive palliative care program at a tertiary cancer center in Jordan. Am J Hosp Palliat Care 2015;32:238–242.
- 5. Khalaileh MA. Jordanian critical care nurses' attitude toward and experiences of do not resuscitate orders. Int J Palliat Nurs 2014;20:403—408.
- **6.** Takrouri M, Halwani T. An islamic medical and legal prospective of do not resuscitate order in critical care medicine. Internet J Health 2007;7:1.
- 7. Hui D, Nooruddin Z, Didwaniya N, et al. Concepts and definitions for "actively dying," "end of life," "terminally ill," "terminal care," and "transition of care": a systematic review. J Pain Symptom Manage 2014;47:77—89.
- 8. Hui D, Dos Santos R, Chisholm G, et al. Clinical signs of impending death in cancer patients. Oncologist 2014;19: 681–687.
- **9.** Lin CP, Evans C, Koffman J, et al. The conceptual models and mechanisms of action that underpin advance care planning for cancer patients: a systematic review of randomised controlled trials. Palliat Med 2019;33:5–23.
- 10. Hui D. Prognostication of survival in patients with advanced cancer: predicting the unpredictable? Cancer Control 2015;22:489–497.
- 11. Morita T, Tsunoda J, Inoue S, Chihara S. The Palliative Prognostic Index: a scoring system for survival prediction of terminally ill cancer patients. Support Care Cancer 1999;7:128–133.
- 12. Hui D, Paiva CE, Del Fabbro EG, et al. Prognostication in advanced cancer: update and directions for future research. Support Care Cancer 2019;27:1973—1984.
- 13. Nacoti M, Ciocca A, Giupponi A, et al. At the epicenter of the Covid-19 pandemic and humanitarian crises in Italy: changing perspectives on preparation and mitigation. NEJM Catalyst 2020 https://doi.org/10.1056/CAT.20.0080.
- 14. Mahase E, Kmietowicz Z. Covid-19: doctors are told not to perform CPR on patients in cardiac arrest. BMJ 2020;368: m1282.
- 15. Washington Post. Faced with a crush of patients, besieged NYC hospitals struggle with life-or-death decisions. Available from https://www.washingtonpost.com/health/2020/03/31/new-york-city-hospitals-coronavirus/. Accessed April 8, 2020.