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Letter

Utilization of Palliative Care Services in Patients with COVID-19 Admitted to an Intensive Care Unit at a Tertiary Hospital in Kenya



To the Editor,

The COVID-19 pandemic continues to pose a threat to the lives of individuals across the globe. Sub-Saharan Africa (SSA) has faced additional challenges due to provider shortages; scarcity of medical facilities and supplies; and mistrust of healthcare workers among patient populations.¹ Palliative care, often underused, has an important role to play in pandemic settings, where a significant number of fatalities can be expected.² The 2017 *Lancet* Commission on Palliative Care pointed out that the need for palliative care and pain relief has been largely ignored, even among those living through humanitarian crises.³ Integration of the palliative care service in Africa remains challenging due to a lack of well-trained palliative care specialist services, cultural unacceptability of end-of-life discussions and limited access to medications such as opioids.⁴

Kenya is a low-middle-income country located in East Africa with a population size of approximately 50 million people. Healthcare resources are sparse with the World Bank reporting approximately 0.2 doctors and 1.2 nurses per 1000 people in Kenya.⁵ In addition, Kenya has approximately 537 total ICU beds with 256 ventilators and only 22% of the population lives within 2 hours of a facility with an ICU. Of 64, 1818 hospital beds in Kenya, 37,216 have access to oxygen supply and 16% of healthcare facilities in the country have access to a pulse oximeter.^{6–8} Palliative care services remain minimal in Kenya. At Aga Khan University Hospital, Nairobi (AKUHN), a tertiary health facility in Kenya, we have a palliative care team that comprises two physicians, a part-time social worker, and a dietician who focuses on end-of-life conversations as well as symptoms management in patients with a chronic life-limiting illnesses.

Little is known or has been published on the use of palliative care services during the COVID-19 pandemic in LMIC particularly in sub-Saharan Africa, with no studies exploring the utilization of palliative care services among the critically ill with COVID 19 in Africa. We chose to explore this further in our setting to better understand the utility and benefits of palliative care services among the critically ill with COVID-19.

Method

We conducted a retrospective chart review study from March 2020 to June 2021 at AKUHN. We included all adults aged ≥ 18 years with COVID-19 pneumonia admitted to the intensive care units at the hospital.

The primary objective was to determine the prevalence of palliative care consults among critically ill patients admitted to the intensive care units with COVID-19. Secondary objectives were to determine the impact of palliative care consults on mortality rates, length of critical care unit stay, and time to do-not-resuscitate (DNR) orders in critically ill patients with COVID-19.

Ethical approval was sought from the Institutional Ethics Review Committee at the Aga Khan University Hospital, Nairobi prior to conducting the study (Ref:2021/IERC-88(v1)). Of 323 patients admitted to the ICU during the study period, 312 patients had complete records and their data was collected using an abstraction tool via the REDCap software. After data collection, the data was checked to ensure all fields had been filled and to assess for any errors by the primary investigator. Data was analyzed using SPSS version 20 and a *P*-value of < 0.05 was considered statistically significant.

The prevalence of palliative care consults was calculated and presented as frequencies and percentages. Categorical data was presented as frequencies and percentages whereas continuous data was presented as medians and interquartile ranges. Univariate analyses were conducted using Fisher's exact test for categorical variables and Mann Whitney test for continuous variables to examine associations between variables with palliative care consults.

Results

The median age of patients admitted to the intensive care units with COVID-19 pneumonia was 61.7 years with 71.2% being male and the major ethnicity being African at 68.3%. The most common comorbidities were diabetes mellitus (58.7%) and hypertension (54.8%). Most of the patients admitted had either severe or critical COVID-19 at 93% with 60.6% requiring mechanical ventilation and 35.3% needing inotropic support.

The final patient disposition from the critical care unit was most often a step down to a noncritical care unit in 55.4% of the study population. However, death occurred in 38.1% of these patients. Only 33 of the 312 patients received a palliative care consult (10.6%) and 5.4% of the patients had a DNR order completed during their hospital stay.

The two groups of patients (those that got a palliative to consult vs. those that did not) were similar regarding median age, distribution of gender, and most common comorbidities. However, of the patients that received a palliative consult, 18.2% had cancer compared to 2.5% in the nonconsult group ($P = 0.001$).

Patients who received a palliative consult were more critically ill as they were more likely to be mechanically

ventilated (90.9% vs. 57%; $P < 0.001$), on inotropic support (65.6% vs. 31.8%; $P < 0.001$), to have critical COVID-19 (97.0% vs. 67.4% $P = 0.04$) and have worse functional status with 30.3% bedridden at baseline compared to 13.6% in the nonconsult group.

The patients who received a palliative care consult completed DNR orders more frequently than those who did not receive a consult (21.2% vs. 3.6%; $P = 0.001$). They also had a higher mortality at 66.7% vs. 34.8% ($P < 0.001$). There was no statistically significant difference between the two groups in the time it took to get a DNR signed (median time of four days). However, the patients who received the consults had a long time to disposition, whether death or discharge, at 12 days vs. seven days in the nonconsult group ($P = 0.003$).

Table 1 depicts the clinical and demographic characteristics as well as the clinical outcomes of the patients who received a palliative care consult vs. those who did not.

Comment

Of the patients admitted to the critical care units with COVID-19 at our institution, only 10.6% received

Table 1
Clinical and Demographic Characteristics and Clinical Outcomes of the Patients Who Received a Palliative Care Consult and Those Who did not

Variables	Palliative Care Consult		PValue	
	Yes (n = 33)	No (n = 279)		
Age (years) (median [IQR])	65.2 [53.3, 80.9]	61.1 [50.2, 72.8]	0.218	
Gender	Female	9 (27.3%)	81 (29.0%)	0.844
	Male	24 (72.7%)	198 (71.0%)	
Ethnicity	African	28 (84.8%)	185 (66.3%)	0.030
	Others	5 (15.2%)	94 (33.7%)	
Comorbidities	Diabetes	23 (69.7%)	160 (57.3%)	0.195
	Hypertension	20 (60.6%)	151 (54.1%)	0.580
	HIV	2 (6.1%)	9 (3.2%)	0.328
	Chronic Kidney Disease	6 (18.2%)	35 (12.5%)	0.411
	Heart Disease	9 (27.3%)	44 (15.8%)	0.137
Patient admission	Cancer	6 (18.2%)	7 (2.5%)	0.001
	COPD	2 (6.1%)	4 (1.4%)	0.124
	Private Doctor	4 (12.1%)	146 (52.5%)	< 0.001
	Faculty	29 (87.9%)	132 (47.5%)	
	Mobile	9 (27.3%)	128 (45.9%)	0.023
Functional status	Restricted Activities	14 (42.4%)	113 (40.5%)	
	Bedridden	10 (30.3%)	38 (13.6%)	
Mechanical ventilation	Yes	30 (90.9%)	159 (57.0%)	< 0.001
	No	3 (9.1%)	120 (43.0%)	
Inotropic support	Yes	21 (65.6%)	87 (31.8%)	< 0.001
	No	11 (34.4%)	187 (68.2%)	
COVID-19 Severity	Mild	0 (0.0%)	13 (4.7%)	0.004
	Moderate	0 (0.0%)	10 (3.6%)	
	Severe	1 (3.0%)	68 (24.4%)	
	Critical	32 (97.0%)	188 (67.4%)	
Formal change of goals (DNR) orders signed	Yes	7 (21%)	10 (3.6%)	0.001
	No	26 (78.8%)	269 (96.4%)	
Outcome	Death	22 (66.7%)	97 (34.8%)	< 0.001
	Discharge/Transfer	11 (33.3%)	182 (65.2%)	
Time to signing of formal change of goals orders (median [IQR]) (days)	4.0 [1.0, 8.0]	4.0 [0.0, 17.0]	1.000	
Time to overall disposition (median [IQR]) (days)	12.0 [5.0, 19.0]	7.0 [3.0, 13.0]	0.0003	

formal palliative care consults. Palliative care involvement is necessary for critically ill patients with COVID-19, particularly due to high mortality rates (38.1% in this study) and other long-term sequelae such as fatigue and dyspnea that need symptom palliation.⁹

Similar to other studies, our study also showed that the group of patients that received palliative care consults had more DNR orders at 21.2% vs. 3.6% in the nonconsult group ($P = 0.001$).¹⁰ This has been shown to improve utilization of limited ICU resources, decrease ICU costs, with shorter ICU stays which are especially important in SSA where ICU care and resources remain scarce.¹¹

In addition, our study showed that 18% of critically ill patients with COVID-19, who received palliative care services also had cancer, in comparison to 2.5% in the nonconsult group. This is not surprising as oncology patients within our institution are the largest recipients of palliative care services and in fact, the palliative care service falls under the department of oncology. On the other hand, this could have created a misconception that palliative care services are primarily intended for cancer patients and resulted in a lower number of consults in the patients who did not have cancer.

Furthermore, our study showed that patients in the consulting group were more likely to be mechanically ventilated or on inotropic support and they had a higher mortality rate at 66.7% vs. 34.8% in the nonconsult group ($P < 0.001$). This was expected as patients who are more critical and had higher palliative needs are more likely to receive a palliative consult.

Of note, patients who received a palliative consult had a long time to disposition at a median time of 12 days as compared to seven days in the nonconsult group ($P = 0.003$). This is in contrast to other studies, where palliative consults resulted in reduced time until death.¹⁰ Our study results could have been skewed by the low number of palliative care consults. It is also possible that pursuing additional aggressive measures in the nonconsult group, such as hemodialysis, could have expedited the death of these patients.

Integration of the palliative care service into the care of critical care patients in SSA has remained challenging. Use of trigger points recently studied in Kenya by the same group of authors has the potential to improve palliative care services utilization in the ICU setting.

Our study had some limitations. We were unable to explore the reasons why some patients received palliative consults while others did not, given the retrospective nature of the study. In addition, chart reviews can be limited by the documentation on palliative care interventions a patient receives. Second, due to the lack of ICU beds, many critical patients with COVID-19 especially during the surges, received care in noncritical care wards and were not included in this study.

Our study highlights the urgent need to foster innovative ways to integrate palliative care services in the management of critically ill patients with COVID-19 in the ICU.

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Data Availability

The clinical information data used to support the findings of this study is included in the article. According to our institutional information governance regulations, the anonymized data can be requested from the corresponding author.

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