

Impact of the second wave of COVID-19 on cancer care at Birat Medical College and Teaching Hospital, Nepal



Sulav Sapkota¹, Mona Priyadarshini²

¹Assistant Professor, Department of Medical Oncology, ²Consultant, Department of Gynae-Oncology, Birat Medical College Teaching Hospital, Biratnagar, Nepal

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ABSTRACT

Background: The second wave of COVID-19 has plunged Nepal into a public health disaster and has also impacted cancer service to our department of Oncology. **Aims and Objectives:** To evaluate the impacts of COVID-19 second wave on outpatient department, inpatient department of oncology, Cancer screening, Cancer patients and Healthcare staffs of oncology department respectively. **Materials and Methods:** We did a prospective descriptive study from April 15, 2021 to June 14 2021 in our Oncology Department at Birat Medical College and Teaching Hospital. All the histopathologically proven cancer patients attending the oncology unit during the specific study periods were taken as study population. Proforma comprising patient details were maintained in excel sheet and the collected data were analyzed with the help of Statistical Package for Social Sciences. **Results:** We have 78% decrement in outpatient visits and 30% decrement in admissions during the study period. We had 89% reduction in the newly diagnosed cases and total fourteen COVID positive cases. About 50% of the COVID-positive cases expired due to desaturation caused by COVID lung while 50% survived with the medical support. Majority of the infection was due to community spread. PCR test was advised for all the COVID suspects with features of fever and separate isolation ward was implemented for such patients. All of the healthcare staffs of oncology unit were immunized with vaccines as per the government protocol and none of them contracted COVID during the pandemic. **Conclusion:** Second wave of COVID-19 had a severe impact on cancer service at our Institution. With the decrement in COVID cases and ease of lockdown, slowly we are trying to gain our momentum with utmost COVID precautions.

Key words: Cancer; Coronavirus disease; Nepal; Second wave

INTRODUCTION

The first wave of coronavirus disease 2019 (COVID-19) which is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2),¹ was declared pandemic^{2,3} on 11 March 2020. We had a negative impact due to the first wave of COVID-19 on cancer management at our institution.⁴ With the end of the first wave of COVID-19, lockdown was removed in Nepal and normal life was beginning by the end of 2020. However, government still implemented proper hand sanitization, use of mask as well as social distancing for COVID precaution. The second wave of COVID-19 cases in Nepal began to

impact the country in April 2021 and has quickly become more widespread and severe than the first wave in 2020. According to data published by the Ministry of Health and Population (11 May), out of 18,400 swab tests, 9,271 cases were COVID positive with case positivity rate around 50% the highest rate across the globe at that moment.⁵ As we know Cancer patients are more prone to COVID-19 as they are more weak, immunosuppressed having multiple comorbidities.⁶ We have a well equipped inpatient oncology department (IPD) with trained sisters who deal with chemotherapy along with Medical Oncologist and Gynecologist. We have separate oncology outpatient department (OPD) for outpatient

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Address for Correspondence:

Dr. Sulav Sapkota, Assistant Professor, Department of Medical Oncology, Birat Medical College Teaching Hospital, Biratnagar, Nepal.
Mobile: +9779842028166. **E-mail:** dr.sulavsapkota@yahoo.com

patients. We run a separate cancer screening OPD for breast and gynecological cancer screenings. Since there are less researches on the impact of second wave of COVID-19 on cancer patients in Nepal, hence in this study, we wanted to evaluate the impact of second wave of COVID-19 on the cancer service in our Oncology Department at our institution. This study will help us to implement plans and policies regarding managing cancer care in our institution in the future in case similar epidemic or pandemic is inevitable.

Aims and objectives

To evaluate the impacts of COVID-19 second wave on cancer care.

MATERIALS AND METHODS

This prospective descriptive study was conducted from April 15, 2021, to June 14, 2021, in the department of Oncology at Birat Medical College Teaching Hospital, Biratnagar, Nepal. The study was pre-approved by the departmental review committee for the permission. All the histopathologically proven cancer patients attending the oncology unit during the specific study periods were taken as study population. Those not giving consent for enrollment in the study were excluded. Polymerized chain reaction (PCR) positivity was taken as positivity of COVID-19 test. Impact of second wave of COVID-19 was studied on different grounds such as outpatient department service, Inpatient department service, Health of cancer patients as well as healthcare workers, respectively. Proforma comprising patient details including age, sex, associated comorbidities, types of cancer, treatment received, COVID test, result, etc were maintained in excel sheet and the collected data were analyzed with the help of Statistical Package for Social Sciences. The main objective of the study was to calculate the decrement in total visits of the patients, decrement in total number of patients and decrement in the diagnosis of new cases. COVID status was categorized as mild, moderate, and severe. Mild cases were who for home isolation without oxygen, moderate cases who required oxygen support during admission to hospital and severe cases were those who required mechanical ventilation support. COVID duration was considered from the day of PCR test positivity to the day patient got better and discharged or patient expired. The patients who were taking full treatment at our institution were considered as booked cases. Travel history especially for the treatment to India was taken from the patients as the second wave of COVID-19 in Nepal followed after the second wave in India. The study was supported by a dedicated team comprising of medical oncology team, enrolled patient along with family involvement. Data was collected by either real time meeting, virtual meeting or

tele-communication. Real-time meeting was done as face-to-face interview of about 15–20 min at OPD or IPD and the data were collected into the excel sheet. Written consent was obtained from the patient for the treatment as well as research purpose.

RESULTS

Impact on OPD service

With the surge in second wave of COVID-19, initially, we had moderate decrement in the patient flow. There were total of 129 OPD visits with 78% decrement in OPD visit and 89% decrement in the diagnosis of new cases (Table 1). However during the mid May, COVID-19 was at the peak and OPD service was closed for a month in view of risk of COVID transmission. During the closure, only emergency patients were seen through emergency department and were admitted to the inpatient department for chemotherapy or supportive care. OPD service resumed after June 15 2021.

Impact on IPD service

Similar to OPD service, IPD service was hit hardly by COVID-19 second phase. Whole IPD department was converted into the COVID department and oncology was shifted back to Medicine ward semi deluxe cabin for about 2 months. Since the hospital was giving service to COVID patients too, there was curtailment of oncology sisters to help for COVID care. Almost 50% of sisters were transferred to COVID care and remaining were taking care of cancer patients as well as medical patients. All the admission for chemotherapy were done through the emergency department after screening properly. In case of suspected COVID, patients were screened at the Isolation ward before the negativity of PCR test. If the PCR test was found to be positive, patients were transferred to COVID care department. The standard chemotherapy regimen protocol was followed with some modifications. Weekly regimen were converted to thrice weekly regimen in order to decrease the frequent hospital visits. Elderly patients were given relaxation in duration of chemotherapy and few were treated with metronomic oral therapy to overcome the

Table 1: Outpatient department service

Characteristics	Frequency (N)	Percentage
Total number of visits	129	-
Total number of patients	48	-
Male patients	22	45
Female patients	26	55
New patients	11	23
Old patients	37	77
Decrement in visits	-	78
Decrement in patients	-	75
Decrement in new diagnosis case	-	89

pandemic duration. However, hematological malignancies followed the treatment guidelines strictly than the solid malignancy patients. Majority of the patients receiving chemotherapy were discharged on the same day. There were total ninety-seven admissions during the study period (Table 2) with more than 90% of old patients admission. There was 30% decrement in the total admission and 25% decrement in the admission of new cases. The patients and visitors were advised to wear proper mask, gloves, faceshield, and avoid crowds. There was no shortage of chemotherapy drugs due to lockdown implemented by the government. We implemented The European Society of Medical Oncology approach for categorizing patients into different priorities for receiving cancer therapy during the second wave too.⁷

Impact on cancer screening service

During the 1st month of the study, there was about 71% decrement in the cancer screening of breast cancer as well as gynecological cancers (Table 3). Mammogram was used to screen for breast cancer while pap smear, colposcopy, biopsy were used to screen for the gynecological cancers. Screening program was closed during the 2nd month in view of risk of COVID transmission. There was decrement in the diagnosis of new cases by about 48% by screening during the study which included mainly gynecological cancers.

Impact on cancer patients

The second wave of COVID-19 impacted cancer patients hardly than the first wave. Total fourteen patients contracted COVID-19 during the study period among which seven succumbed to death and only seven could

manage to survive with the help of medical supports (Tables 4 and 5). The age range of patients who expired was from 20 to 92-years-old. Majority of the positive cases were Lung cancer (29%) and Hematological cancers (29%). There were only 4 (29%) booked cases from our institution and only 3 (21%) cases had travel history to India for the treatment of cancer. All the positive cases were transferred to COVID centers and were admitted to the Intensive Care Unit due to oxygen desaturation. Mortality was due to pneumonia caused by corona virus known as COVID lung. Out of seven mortality, only four cases were in advanced stage undergoing treatment who had severe immunosuppression due to chemotherapy resulting in their death with mortality index of about 57%.

Impact on healthcare staffs

Healthcare staffs including doctors, nursing staffs, helpers were all in the fear of contracting coronavirus while working in our department. Handwashing, face mask, hand sanitization, and proper gown were implemented strictly during the working hours. Fifty percent of nursing staffs were transferred to COVID care where they use to work for 14 days continuously and isolate for 14 days. Rest fifty percent nursing staffs were implemented to take care of cancer patients as well as medical patients. All the staffs were regularly screened with PCR test on the basis of symptoms. However, none of the healthcare staffs contracted COVID during the study period. Our hospital has implemented government insurance program for all the healthcare staffs. Besides it, all the healthcare staffs were vaccinated twice for COVID-19 as per the government protocol. All the academics and research-oriented meetings were conducted on virtual platforms.

Table 2: Inpatient department service

Characteristics	Frequency (N)	Percentage
Total number of admissions	97	-
Total number of patients	64	-
Male patients	32	50
Female patients	32	50
New patients	6	10
Old patients	58	90
Decrement in admissions	-	30
Decrement in patients	-	26
Decrement in new cases	-	25

Table 3: Cancer screening service

Characteristics	Frequency (N)	Percentage
Total number of screening	25	-
Breast cancer screening	6	24
Gynaecological cancer screening	19	76
New patients	12	48
Decrement in screening	-	71
Decrement in new diagnosis case	-	52

DISCUSSION

In our study, there was more decrement (78%) in OPD visits than the IPD admission (30%) which was primarily due to lockdown implemented by the government to prevent the transmission of COVID and IPD patients were mainly the old patients (90%) who were continuing the chemotherapy with all the precautions. However, the worst scenario is the 89% decrement in the new cancer cases by OPD visit as it will delay the diagnosis of patients resulting in more advanced stages of cancer increasing the morbidity as well as mortality of the patients.^{8,9} This decrement in new diagnosis is probably caused by fear of the patients to visit hospitals where the virus is present.¹⁰

Ensuring safety of cancer patients along with the healthcare workers during this second wave of COVID was of prime importance. However, we could not have utmost control in our hands. Even with the COVID precautions and proper

Table 4: Characteristics of cancer patients succumbed to COVID second wave

Number of Cases	1	2	3	4	5	6	7
Sex	Female	Male	Male	Male	Female	Female	Male
Age	29	20	55	92	67	65	64
Marital status	Yes	No	Yes	Yes	Yes	Yes	Yes
Diagnosis	Ovary	Lymphoma	Lung	Prostate	Lung	CLL	Brain
	Stage 2	Stage 4	Stage 4	Stage 2	Stage 4		Stage 4
Disease status	Remission	Advanced stage	Advanced	Remission	Advanced	Remission	Advanced
COVID status	Severe	Moderate	Severe	Severe	Moderate	Severe	Moderate
COVID Result	Expired	Expired	Expired	Expired	Expired	Expired	Expired
COVID Duration	3 days	30 days	8 days	6 days	5 days	12 days	30 days
Booked cases	Unbook	Unbook	Unbook	Booked	Unbooked	Booked	Unbooked
Travel History	No	Yes	Yes	No	No	No	No

Table 5: Characteristics of cancer patients survived to COVID second wave

Number of cases	1	2	3	4	5	6	7
Sex	Female	Male	Female	Male	Male	Male	Male
Age	15	50	67	60	65	55	25
Marital status	No	Yes	Yes	Yes	Yes	Yes	No
Diagnosis	MDS	Prostate	Breast	Lung	Lung	Colon	Lymphoma
		Stage 2	Stage 3	Stage 4	Stage 4	Stage 2	Stage 3
Disease status	Remission	Remission	Advanced	Advanced	Advanced	Remission	Advanced
COVID status	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate	Moderate
COVID Result	Survived	Survived	Survived	Survived	Survived	Survived	Survived
COVID Duration	14 days	16 days	21 days	12 days	14 days	16 days	13 days
Booked cases	Booked	Unbooked	Unbooked	Unbooked	Unbooked	Booked	Unbooked
Travel History	No	No	Yes	No	No	No	No

PPE, fourteen cancer patients contracted COVID during the second wave and seven cases succumbed to death. Out of the fourteen positive cases, four cases were our booked cases while rest ten were the unbooked cases. Among the booked cases, two patients succumbed to death while two managed to survive the COVID. The worst part is that the three patients who died due to COVID were in clinical remission to cancer and only four patients were advanced cases undergoing treatment. This resulted in the effort to cure the cancer futile.

Only three positive cases had the travel history to India where they contracted the COVID and rest of the eleven cases did not have the travel history. This emphasizes that the majority of the patients (79%) had community spread of COVID which reveals the severity of the pandemic in our eastern province of Nepal. Though the government had reinforced sealing of international borders to India as well as canceled the international flights, it could not confine second wave of COVID to have community spread on time.¹¹ The cause could be due to mutation of the COVID-19 resulting in aggressive strain that resulted community spread in no time.¹²

Four (29%) positive cases were lung cancer patients and four (29%) were blood cancer patients. COVID was more common to them, cause could be lung cancer patients have physiological as well as pathological changes in their lungs resulting in severe infection.¹³ Blood cancer patients

may be due to their decrease cellular as well as humoral immunity were more prone to get the severe infection.¹⁴ These patients needed more intensive care supports and high risk of mortality.¹⁵

Our institution had a great role play in preventing as well as treating COVID patients during the second wave. Awareness programs on COVID-19 symptoms, use of personal protective equipments by health care workers, screenings tests, and quarantine/isolation protocols was implemented by the hospital. Full fledge COVID Hospital was started to treat COVID-positive patients in our hospital. All the patients were screened for COVID before admission into the oncology department on regular basis. Even the medical staffs were screened on regular basis and quarantined as required. Handwashing, face mask, and sanitization were implemented strictly by the hospital management. Even the insurance program and vaccination was provided to all the Healthcare staffs by the hospital. None of the oncological health care staffs contracted COVID during the second wave which could be due to handwashing, hand sanitization and proper facemask implementation by the oncology department.

Limitations of the study

This is a single center study with smaller study population and comparison inbetween the impacts of the first wave and second wave of COVID 19 is not being studied.

CONCLUSION

Although we have a severe impact due to second wave of COVID-19 on cancer care at our institution, with the support of all, we tried to provide the best possible care even in these hard times. Vaccination program is ongoing and we hope for the control of the COVID-19 pandemic to provide better cancer care in the future.

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Authors Contribution:

SS- Concept, design, manuscript preparation, data analysis; **MP-** Manuscript revision, review of literature, finalisation of manuscript

Work attributed to:

Birat Medical College Teaching Hospital, Biratnagar, Nepal

Orcid ID:

Dr. Sulav Sapkota - <https://orcid.org/0000-0003-4894-6455>

Dr. Mona Priyadarshini - <https://orcid.org/0000-0003-1916-7225>

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