



“A COMPARATIVE RETROSPECTIVE STUDY TO EVALUATE THE IMPACT OF COVID 19 ON CANCER IPD IN CHHATTISGARH INSTITUTE OF MEDICAL SCIENCES, BILASPUR, CHHATTISGARH.”

Oncology

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ABSTRACT

Background: The COVID-19 disease, also known as the corona virus disease, is an ongoing global pandemic of corona virus 2019 (COVID-19) caused by severe acute respiratory syndrome corona virus 2 (SARS-CoV-2). The virus was first identified in December 2019 in Wuhan, China. The World Health Organization declared a Public Health Emergency of International Concern regarding COVID-19 on 30 January 2020, and later declared a pandemic on 11 March 2020. As of 28 May 2021, more than 168 million cases have been confirmed, with more than 3.51 million confirmed deaths attributed to COVID-19, making it one of the deadliest pandemics in history. The first case in Chhattisgarh state was found in capital Raipur on 19th March 2020. Most people who fall sick with COVID-19 will experience mild to moderate symptoms and recover without special treatment. The virus that causes COVID-19 is mainly transmitted through droplets generated when an infected person coughs, sneezes, or exhales. These droplets are too heavy to hang in the air, and quickly fall on floors or surfaces. People can be infected by breathing in the virus if they are within close proximity of someone who has COVID-19, or by touching a contaminated surface and then your eyes, nose or mouth. Covid-19 infection also causes problems for the management and follows up of cancer patients their regular investigation and chemotherapy is also interrupted mostly due to nationwide lockdown. **Objective:** To evaluate the impact of Covid-19 on cancer patients IPD in Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh during Covid-19 pandemic **Method:** This retrospective comparative clinical study is conducted in the department of Radiotherapy, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh. The 1 year IPD from 20 March 2019 to 20 March 2020 is compared with the data from Covid-19 era from 20 March 2020 to 20 March 2021. Frequency tables, comparative charts are used to evaluate and measure the data from the study to describe the impact of Covid-19 on cancer patients' treatment **Result:** In Pre Covid-19 yr i.e. from 20 March 2019 to 20 March 2020, 759 out of 1532 cancer patients (49%) were belonged to > 45 years age group followed by 40% in 18-45 year group and only 10% of admitted patients were below 18 yrs of age. Whereas in Covid-19 yr i.e. from 20 March 2020 to 20 March 2021, 49% patients were above 45 yrs of age followed by 36% in age group of 18-45 and only 15% patients were below 18 yrs. 834 out of 1532 (54%) cancer patients were females in Pre Covid-19 yr whereas male IPD patients were 45%, During Covid-19 pandemic year males were predominant in IPD i.e. 55% whereas female IPD population was 45%. In Pre Covid-19 yr, 995 out of 1532 (65%) patients of lower SES came to cancer IPD, 33% patients were of middle SES and only 2% were belonged to upper class. Whereas in Covid-19 pandemic year lower class patients reported was 56% and upper class were 5%. In Pre Covid-19 yr Head & Neck cancer patients were registered and treated predominantly i.e. 342 out of 1532 (22.32%) followed by Breast cancer 18%, Gynecological cancers 16%, lung cancers 8%. In Covid-19 pandemic year the total cancer IPD registered was 1200, head & neck cancers were predominant (23%), hematological cancers (Lymphoma/leukemia) were seen in 17% patients followed by cancer cervix 13%, breast cancer 12%, colorectal cancer 7.6% and other cancers constituted 14.66%. **Conclusion:** We observed in our study that In Pre Covid-19 yr i.e. from 20 March 2019 to 20 March 2020, majority of the cancer IPD patients registered were old females and belonged to lower SES, head & neck cancers were predominant followed by breast and gynecological cancers, in covid-19 pandemic year there was slight increase in male and upper SES patients compared to pre covid-19 year, a surge in IPD of 6% is seen in hematological malignancies and fall of 6% IPD of breast cancer is noted in covid-19 pandemic year.

KEYWORDS

Covid-19, Pandemic, IPD, chemotherapy, Malignancy.

INTRODUCTION

COVID-19 is the disease caused by a new corona virus called SARS-CoV-2. WHO first learned of this new virus on 31 December 2019, following a report of a cluster of cases of 'viral pneumonia' in Wuhan, People's Republic of China.^{[1][2]} The most common symptoms of COVID-19 are fever, dry cough, fatigue other symptoms that are less common and may affect some patients include loss of taste or smell, nasal congestion, sore throat, headache, muscle or joint pain, different types of skin rash, nausea or vomiting, diarrhoea, chills or dizziness.^{[3][4]} Stay safe by taking some simple precautions, such as physical distancing, wearing a mask, especially when distancing cannot be maintained, keeping rooms well ventilated, avoiding crowds and close contact, regularly cleaning your hands, and coughing into a bent elbow or tissue.^{[5][6]} As of 28 May 2021, more than 170 million cases have been confirmed, with more than 3.51 million confirmed deaths attributed to COVID-19, making it one of the deadliest pandemics in history.^[7] The first case in Chhattisgarh state was found in capital Raipur on 19th March 2020.^[8] The emergence of the novel virus SARS-CoV-2 has caused morbidity, mortality and societal disruption on a global scale. In the absence of pharmaceutical interventions, many countries have resorted to population-wide lockdowns to slow the spread of the virus and to allow their health systems to cope.^[9] These lockdowns have had

an important effect on SARS-CoV-2 transmission.^[10] The main concern is that health services have been partially or completely disrupted in many countries and states. Overall 42% for cancer management is disrupted by covid-19 the key reasons behind it is the Reassignment of health staff from their primary service to support COVID-19.^[11] The postponement of public screening programmes (for example for breast and cervical cancer) was also widespread, reported by more than 50% of countries. But the most common reasons for discontinuing or reducing services were cancellations of planned treatments, a decrease in public transport available and a lack of staff because health workers had been reassigned to support COVID19 services. In one in five countries (20%) reporting disruptions, one of the main reasons for discontinuing services was a shortage of medicines, diagnostics and other technologies. Unsurprisingly, there appears to be a correlation between levels of disruption to services for treating cancers and the evolution of the COVID-19 outbreak in a country. Services become increasingly disrupted as a country moves from sporadic cases to community transmission of the corona virus. Alternative strategies for continuing care being implemented like telemedicine to replace in-person consultations.

OBJECTIVE:

To evaluate the impact of Covid-19 on cancer patients IPD in Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh during Covid-19 pandemic.

MATERIAL AND METHOD

METHOD:

This retrospective comparative clinical study is conducted in the department of Radiotherapy, Chhattisgarh Institute of Medical Sciences, Bilaspur, Chhattisgarh. The 1 year pre Covid-19 IPD from 20 March 2019 to 20 March 2020 is compared with the data from Covid-19 era from 20 March 2020 to 20 March 2021. Frequency tables, comparative charts are used to evaluate and measure the data from the study to describe the impact of Covid-19 on cancer patients' IPD.

Patient Inclusion Criteria

- 1) All Histopathological proven cases of cancer.
- 2) ECOG performance score of 0 or 5.
- 3) All Patients who are registered in cancer department as IPD

Patient Exclusion Criteria

- 1) Transfer- in patients from other department.
- 2) Patient who took treatment on OPD basis only.

Major Variables

- 1) Age
- 2) Gender
- 3) Socioeconomic status
- 5) IPD data pre Covid-19 year
- 6) IPD data Covid-19 year

RESULTS

This retrospective observational clinical study involved the cancer patients' IPD data of pre Covid-19 year from 20 March 2019 to 20 March 2020 and data of first year of Covid-19 year from 20 March 2020 to 20 March 2021. This study is conducted in department of Radiation Oncology, CIMS hospital, Bilaspur Chhattisgarh. All patients' data of both years were thoroughly evaluated and studied.

The results are as follows:

Age

In Pre Covid-19 yr i.e. from 20 March 2019 to 20 March 2020, 759 out of 1532 cancer patients (49%) were belonged to >45 years age group followed by 40% in 18-45 year group and only 10% of admitted patients were below 18 yrs of age. Whereas in Covid-19 yr i.e. from 20 March 2020 to 20 March 2021, 49% patients were above 45 yrs of age followed by 36% in age group of 18-45 and only 15% patients were below 18 yrs. This data shows that during covid-19 pandemic the young patients (<18yrs) were increased while IPD of other two age group patients were decreased.

Table 1 Age wise distribution of IPD patients

Age Range(yr)	< 18	18-45	>45	Total
Pre Covid-19 yr	158(10.13%)	615(40.14%)	749(48.89%)	1532
Covid-19 yr	185(15.41%)	427(35.58%)	588(49%)	1200

Gender

834 out of 1532(54%) cancer patients were females in Pre Covid-19 yr whereas male IPD patients were 45%, only 1 transgender patient was reported. During Covid-19 pandemic year males were predominant in IPD i.e. 55% whereas female IPD population was 45%, no patients of transgender community was reported. This data revealed that male cancer patients' IPD was increased in covid-19 pandemic than females.

Table 2 Gender wise Distribution of IPD patients

Gender	Male	Female	Transgender	Total
Pre Covid-19 yr	697(45.49%)	834(54.43%)	1(0.007)	1532
Covid-19 yr	663(55.25%)	537(44.75%)	0	1200

Socio-economic status

In Pre Covid-19 yr, 995 out of 1532 (65%) patients of lower socioeconomic strata came to cancer IPD, on the other hand 33% patients were of middle class economy status and only 2% were belonged to upper class. Whereas in Covid-19 pandemic year lower class patients reported was 56% and upper class were 5%. This data clearly stated that during the pandemic year the patients of upper socioeconomic strata were increased while lower class patient were

slightly decreased.

Table 3 Socio-economic status wise distribution of patients

SES	Lower Class	Middle Class	Upper Class	Total
Pre Covid-19 yr	995(64.94%)	510(33.28%)	27(1.76%)	1532
Covid-19 yr	678(56.5%)	458(38.16%)	64(5.33%)	1200

Total IPD data from 20 march 2019 to 20 march 2020

In Pre Covid-19 yr i.e. from 20 March 2019 to 20 March 2020 the total IPD registered in radiotherapy department, CIMS was 1532, these patients received chemotherapy (intravenous, oral, hormonal, metronomic, targeted, molecular, intraperitoneal), symptomatic IV treatment, pain management (oral, IV), emergency critical care and other conservative management in different forms after admission in cancer ward.

Head & Neck cancer patients were registered and treated predominantly i.e. 342 out of 1532 (22.32%) which is consisted of different sub sites including buccal mucosa, alveolus, tongue, gingivobuccal sulcus, thyroid, soft palate, hard palate. Breast cancer patients were 18%. Gynaecological cancers (cancer cervix & cancer ovary) constituted the 16% of total cases followed by haematological malignancies 12% and lung cancers 8%.

Table 4 Total IPD data from 20 March 2019 to 20 March 2020

Head & Neck ca.	Breast can.	Cervix can.	Lung can.	Colorectal can.	Ovary can.	Lymphoma/leukemia	others	Total
342	278	200	122	145	60	180	205	1532
22.32%	18.14%	13.05%	8%	9.46%	3.4%	11.80%	13.38%	100%

Total IPD data from 20 march 2020 to 20 march 2021

In Covid-19 pandemic year the total cancer IPD registered was 1200, head & neck cancers were predominant (23%), hematological cancers (Lymphoma/leukemia) were seen in 17% patients followed by cancer cervix 13%, breast cancer 12%, colorectal cancer 7.6% and other cancers constituted 14.66%.

Table 5 Total IPD data from 20 March 2020 to 20 March 2021

Head & Neck ca.	Breast can.	Cervix can.	Lung can.	Colorectal can.	Ovary can.	Lymphoma/leukemia	others	Total
278	148	209	40	92	47	210	176	1200
23.16%	12.33%	13.05%	3.33%	7.6%	4%	17.50%	14.66%	100%

DISCUSSION

The corona virus pandemic has disrupted the all forms of other health care services including communicable and non communicable diseases. In Chhattisgarh state the first case was found in AIIMS, Raipur on 19th March 2020. The country has experienced the first nationwide lockdown from 24 March 2020 for 21 days limiting the movement of entire population as a preventive measure against the Covid-19 pandemic.^[12] the lockdown continued in different phases till 31 May 2020. During this time the movement of entire population was limited which resulted in postponement and delaying of many health care services including oncological care which includes chemotherapy, radiotherapy, targeted therapy, IV symptomatic managements and many more. Consequently the deterioration of health status of cancer patients. Many patients reached the hospital for oncological care during the period and benefited, Overall 42% for cancer management is disrupted by covid-19 the key reasons behind it is the reassignment of health staff from their primary service to support COVID-19.^[11] As the time passes the city Bilaspur Chhattisgarh was also burdened with infected covid-19 positive patients, thus Medical College Hospital was transformed to Covid-19 isolation Centre later on Covid-19 Dedicated centre, entire staff from medical college and hospital was rearranged for the covid-19 care services which included the cancer care staff also which further aided the disruption of oncological care services in our centre. Meanwhile Cancer OPD and ward was functioning well despite the reduced manpower and skilled staff. 1200 IPD was registered during covid-19 era in radiotherapy department, CIMS, Bilaspur, Chhattisgarh from 20 March 2020 to 20 March 2021 out of which head & neck cancers were predominant (23%), hematological cancers (Lymphoma/leukemia) were seen in 17% patients followed by cancer cervix 13%, breast cancer 12%, colorectal cancer 7.6% and other cancers constituted 14.66%. this data

was compared to the data from previous year i.e. from 20 March 2019 to 20 March 2020. We observed in our study that In Pre Covid-19 yr i.e. from 20 March 2019 to 20 March 2020, majority of the cancer IPD patients registered were old females and belonged to lower SES, head & neck cancers were predominant followed by breast and gynecological cancers, in covid-19 pandemic year there was slight increase in male and upper SES patients compared to pre covid-19 year, a surge in IPD of 6% is seen in hematological malignancies and fall of 6% IPD of breast cancer is noted in covid-19 pandemic year. The increase in IPD of upper class cancer patients suggested that they were unable to travel to other tertiary cancer care centre due to nationwide lockdown and in fear of covid-19 infection.

CONCLUSION

We observed in our study that In Pre Covid-19 yr i.e. from 20 March 2019 to 20 March 2020, the total IPD was 1532, majority of the cancer IPD patients registered were old females and belonged to lower SES, head & neck cancers were predominant followed by breast and gynecological cancers, in covid-19 pandemic year total IPD was 1200, there was slight increase in male and upper SES patients compared to pre covid-19 year, a surge in IPD of 6% is seen in hematological malignancies and fall of 6% IPD of breast cancer is noted in covid-19 pandemic year.

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