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CO-INCIDENCY OF COVID-19 IN CANCER PATIENTS ATRSUP H. ADAM MALIK AND USU GENERAL HOSPITAL MEDAN IN 2021

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ABSTRACT

Background: The incidence of COVID-19 is at risk in patients with comorbid hypertension and diabetes mellitus, male sex, and active smokers. Cancer is associated with immunosuppressive reactions, cytokine overload, suppression of proinflammatory agent induction, and impaired dendritic cell maturation.Based on another study at a hospital in Wuhan, it was found that cancer patients from the epicenter of the viral epidemic had a higher risk of being infected with SARS-CoV-2. Based on the Based on the description above, the researchers wanted to know the co-incidence of COVID-19 in cancer patients at H. Adam Malik Hospital and USU Hospital Medan. **Methods:** This study is a descriptive study to assess the co-incidence of COVID-19 in cancer patients at H. Adam Malik Hospital and USU Hospital Medan. The sample of this study were all cancer patients at H. Adam Malik Hospital and USU Hospital Medan who met the inclusion criteria. Data classified into categories or code to make it easier to tabulate data.All data is processed and displayed in a frequency distribution table with the help of statistical software. **Results:** It was found that from 891 patients, the average age of COVID-19 patients with cancer was 44 years while 12 patients (1.34%) experienced COVID-19 and Cancer Coincidence. The most cases were breast cancer patients with 3 cases. **Conclusion:** It was found that 12 patients (1.34%) had COVID-19 and cancer with the most cases were breast cancer, 3 cases and most of them have COVID-19moderate degree.

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INTRODUCTION

Coronavirus Disease 2019 (COVID-19) infection is a new type of disease that has never been previously identified in humans. The virus that causes COVID-19 is called SARS-CoV-2. Based on scientific evidence, COVID-19 can be transmitted from human to human through close contact and droplets (Cennimo, 2020). The worldwide incidence of COVID-19 until July 20, 2020 reached 14,689,596 cases in 251 countries. The increasing incidence causes a fairly high mortality in the world, which is around 4% (Worldometers, 2020). The incidence of COVID-19 is at risk in patients with comorbid hypertension and diabetes mellitus, male sex, and active smokers. Cancer is associated with immunosuppressive reactions, cytokine overload, suppression of proinflammatory agent induction, and impaired dendritic cell maturation (Xia, 2020).

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Cancer sufferers experience stress both psychologically and physically, because of the disease or the treatment process they are undergoing. Stress in cancer patients will have a negative effect on the immune system. This can increase the patient's risk of COVID-19 (American Cancer Society, 2017). It is hypothesized that cancer patients may be susceptible to infection during viral epidemics as a result of decreased immune status, which may be caused by cancer treatment. The first report on the discovery of COVID-19 in cancer patients was published on February 14, 2020 as many as 18 patients with a history of cancer in China were diagnosed with COVID-19. A total of 7(39%) patients had to be admitted to intensive care (ICU) and/or experienced mortality (Xia, 2020; Liang *et al.*, 2020). Worsening infection, poorer prognosis, higher number of ICU admissions, need for mechanical ventilation and higher mortality were found in the Cancer patient group with COVID-19 (Guan, 2020). Based on another study at a hospital in Wuhan, it was found that cancer patients from the epicenter of the viral epidemic had a higher risk of being

infected with SARS-CoV-2 (OR = 2.31, 95% CI = 1.89-3.02) when compared with patients without cancer. However, less than half of patients infected with COVID-19 are undergoing active treatment for their cancer. Patients with leukemia, lung cancer and secondary cancer have a worse prognosis for COVID-19. It can be argued that one-third of patients end up being treated for supportive and palliative measures, and these patients may be immunosuppressed. The study implies that both hospitalization and repeated hospital visits are potential risks for SARS-CoV-2 infection. These factors are thought to explain the increased incidence of COVID 19 among cancer patients (Guan, 2020). A prospective analysis in Paris examining the co-incidence of COVID 19 in breast cancer patients, was tested with the test(N = 41) and with a CT scan of the thorax (N = 18 patients), from a total of 76 samples that were examined, selected based on the presence of suspected symptoms, or the incidence of radiological screening and at the time of routine preoperative examination, a total of 59 breast cancer patients were confirmed to have breast cancer. COVID 19 infection. The study also showed that the COVID-19 mortality rate in patients with breast cancer was more dependent on comorbidities than the presence of a history of radiation therapy or chemotherapy. Based on the description above, the researchers wanted to know the coincidence of COVID-19 in cancer patients at H. Adam Malik Hospital and USU Hospital Medan.

METHODS

This study was a descriptive study to assess the co-incidence of COVID-19 in cancer patients at H. Adam Malik Hospital and USU Hospital Medan. The research was conducted at H. Adam Malik Hospital and USU Hospital Medan. The sample of this study were all cancer patients at H. Adam Malik Hospital and USU Hospital Medan who met the inclusion criteria. Inpatients or outpatients at H. Adam Malik Hospital and USU Hospital Medan, patients with COVID-19 rapid test examinations, patients without a previous history of COVID-19, patients with or without a history of chemotherapy, radiotherapy, hormonal therapy and surgery were admitted to the hospital. Meanwhile, patients without results/waiting for the results of the rapid test, PCR or CT-Scan and patients with pulmonary TB or pneumonia were excluded from the study. After editing or checking, namely checking the completeness of medical record data. Continued coding or marking, namely classifying data into categories and classified by means of marking or code to make it easier to tabulate data. Then the data was tabulated, namely answers that have been given a data category and then entered into a table. All data is processed and displayed in a frequency distribution table with the help of statistical software.

RESULTS

The results of this study were obtained from patient medical records from March-December 2020 which consisted of 891 COVID-19 patients diagnosed with COVID-19 using the Rapid Test, Antigen Swab or PCR Swab method with details of 492 patients being treated at the hospital. H. Adam Malik Hospital and as many as 399 patients were treated at USU Hospital Medan. In table 4.1. A description of the age of the patients included in this study, it was found that from 891 patients, the average age of COVID-19 patients with cancer was 44 years, while the median age of COVID-19 patients with cancer was 52 years. Where the age of the youngest patient was 27 years and the age of the oldest patient in this study was 78 years.

Table 1. Age Characteristics of COVID-19 Patients with Cancer at H. Adam Malik Hospital and USU General Hospital Medan

Average	median	Minimum	Maximum
44 years old	52 years old	27 years	78year

Table 2. Gender Characteristics of COVID-19 Patients at H. Adam Malik Hospital and USU General Hospital Medan

Gender	Number of Patients (%)
Man	301 (33.7)
girl	590 (66.3)
Total	891 (100)

Gender: In table 2 there are data regarding the sex of patients suffering from COVID-19, which in this study consisted of 301 male patients and 590 female patients.

Patients with Coincidence of COVID-19 and Cancer: Table 4.3 shows that from a total of 891 patients included in this study, 12 patients (1.34%) experienced COVID-19 and Cancer Coincidence. Based on this data, 11 patients with COVID-19 and Cancer Coincidence came from H. Adam Malik Hospital and 1 patient came from USU Hospital in Medan.

Table 3. Coincidence Prevalence of COVID-19 Patients with cancer

Coincidence of COVID-19 with cancer	Number of Patients (%)
Haji Adam Malik Hospital	11 (91.7)
USU General Hospital	1 (8.3)
Total	12100)

Cancer Staging in Patients with Coincidence of COVID-19 and Cancer: In staging based on AJCC 8, 1 patient had stage 2 cancer, 3 patients had stage 3 cancer, and 8 patients had stage 4 cancer.

Table 4. Cancer Staging in Patients with COVID-19 Coincidence with Cancer

Cancer Stage	Number of Patients (%)
Stage 1	0 (0)
Stage 2	1 (8.3)
Stage 3	3 (25.3)
Stage 4	8 (66.4)
Total	12100)

Table 5. Types of Cancer in Patients with COVID-19 Coincidence with Cancer

Cancer Type	Number of Patients (%)
Lymphoma	2 (16.6)
Cervical cancer	1 (8.3)
Vulvar Cancer	1 (8.3)
Ovarian Cancer	2 (16.6)
Renal Cancer	1 (8.3)
Skin cancer	1 (8.3)
Rectal Cancer	1 (8.3)
Breast cancer	3 (25.3)
Total	12 (100)

Types of Cancer in Patients with Coincidence of COVID-19 and Cancer: Based on the classification of cancer types, there were several types of cancer, namely cervical cancer,

vulvar cancer, renal cancer, skin cancer, rectal cancer each with 1 case, lymphoma and ovarian cancer in 2 cases, and the most cases in breast cancer with 3 cases.

Table 6. Histopathology of Cancer in Patients with COVID-19 Coincidence with Cancer

Histopathology	Number of Patients (%)
Small Cell NHL	1 (8.3)
Non Keratinizing SCC	1 (8.3)
Predominant Hodgkin Lymphoma	1 (8.3)
Low Grade Adenocarcinoma Ovarian Intestinal Type	1 (8.3)
Mucinous Carcinoma	1 (8.3)
Clear Cell Carcinoma	2 (16.7)
Malignant Melanoma	1 (8.3)
Well Diff Adenocarcinoma Recti	1 (8.3)
Invasive Ductal Carcinoma	2 (16.7)
Invasive Lobular Carcinoma	1 (8.3)
Total	12100)

Types of Cancer in Patients with Coincidence of COVID-19 and Cancer: Based on the results of histopathological examination of the 12 patients, the majority of patients were breast cancer patients with histopathology of Invasive Ductal Carcinoma as many as 3 patients, meanwhile in Small Cell NHL, Non-Keratinizing SCC, Low Grade Adenocarcinoma Ovarian Intestinal Type, Mucinous Carcinoma, Clear Cell Renal Carcinoma, Malignant Melanoma, Well Diff Adenocarcinoma Recti, Invasive Lobular Carcinoma each found 1 patient per case.

Table 7. Severity of COVID-19 Symptoms in Patients with Coincidence of COVID-19 with cancer

Severity of COVID-19 Symptoms	Number of Patients (%)
Light	3 (25.4)
Medium	5 (41.7)
Weight	4 (32.9)
Total	12100)

Table 8. Need for ICU Care and Use of Ventilators in Patients with COVID-19 Coincidence with cancer

ICU and Ventilator Care Needs	Number of Patients (%)
Requires ICU and ventilator care	4 (32.9)
Does not require ICU and ventilator care	8 (67.1)
Total	12100)

Degree of Severity of COVID-19 Symptoms in Patients with Coincidence of COVID-19 and Cancer: The severity of COVID-19 can be classified based on mild, moderate and severe symptoms. In this study, the number of patients with mild degrees was 3 people, at moderate degrees as many as 5 patients, and in severe degrees as many as 4 patients.

The need for ICU care and ventilator use in patients with COVID-19 and cancer co-incidence: The need for ICU care with the use of a ventilator in COVID-19 patients is usually required in patients with severe symptom severity. In this study, it was found that all patients with severe symptoms, namely 4 patients were treated in the ICU using a ventilator.

Mortality of Patients with Coincidence of COVID-19 and Cancer: From this study, it was found that 2 COVID-19 patients with cancer co-incidence died, and the remaining 10 patients recovered and went home for outpatient treatment.

Table 9. Patient Mortality with COVID-19 Coincidence with Cancer

Final State of Patients with COVID-19 Coincidence with cancer	Number of Patients (%)
get well	10 (83.3)
Died	2 (16.7)
Total	12 (100)

DISCUSSION

Although the susceptibility of cancer patients to severe COVID-19 has not been established, it is known that patients with compromised immune systems, such as cancer patients, are susceptible to infection. On the other hand, delay in treatment modalities is associated with higher breast cancer-specific mortality and all-cause mortality. Timely treatment throughout the course of breast cancer treatment is important for optimal results. Health facilities around the world are taking precautions (Yung, 2020). Most cancer center hospitals have suspended non-urgent poly-surgical controls and screened everyone on admission. A retrospective clinical study of early cases of COVID-19 showed that 41.3% were caused by hospital-associated transmission. Most hospitals have canceled elective surgery, but that is unlikely to affect the vast majority of cancer patients. Data regarding cancer management policies during the COVID-19 outbreak is still limited. To the authors knowledge, this study evaluating the risk of COVID-19 in patients with cancer was first published in The Lancet Oncology on February 14, 2020. The authors conclude that the proportion of patients with a history of cancer was higher in the group with COVID-19 than in the non-COVID-19 population. in China. Patients with cancer are more likely to develop COVID-19. They found that 18 COVID-19 patients with a history of cancer were among 1,590 COVID-19 patients from 575 hospitals in 31 provincial areas. The treatment status of 16 of the 18 patients was known. Four of the 16 patients had undergone surgery or chemotherapy in the previous month, and another 12 (75%) were cancer survivors with routine follow-up and had no immunosuppressive therapy.

In the description of the age of the patients included in this study, it was found that from 891 patients the median age of COVID-19 patients with cancer was 52 years. Where the age of the youngest patient is 27 years and the age of the oldest patient in this study is 78 years.In a study conducted by Wang *et al*. it was reported that the median age of these patients was 63.1 years, which was significantly higher than the median age of those without cancer of 48.7 years. This suggests that older age may be associated with worse COVID-19 outcomes. In this study, it was obtained from a total of 891 patients included in this study, as many as 12 patients (1.34%) experienced the incidence of COVID-19 and cancer. Based on this data, 11 patients with COVID-19 and Cancer Coincidence came from H. Adam Malik Hospital and 1 patient came from USU Hospital Medan. Another study by Suleman in 2020 stated thatthere were only 18 patients with various types of cancer with different biological markers and different treatment strategies from all COVID-19 patients. The reported results may be due to the higher rates of smoking history in the 18 patients with cancer. Data show that tobacco use significantly increases gene expression of the angiotensin-converting enzyme, the binding receptor for severe acute respiratory syndrome, coronavirus-2.10. The COVID-19 mortality rate in cancer patients aged between 70 and 79 years is 8%, while

patients in their eighties show a 15% mortality rate. Among a cohort of 52 cancer patients with a mean age of 63 years, Yang *et al*. reported that 19 patients were critically ill, and 11 died from complications (mortality rate 21.2%). Patients suffering from additional comorbidities, such as diabetes, hypertension, coronary artery disease, and respiratory conditions, accounted for 63.5% of the cohort. In another one-centre study, Yang *et al*. analyzed 52 seriously ill COVID-19 patients admitted to the ICU. Of these patients, 50% had chronic comorbidities. Two patients had malignancy; one of these patients recovered, and the other died. Adverse events associated with COVID-19 may be overestimated because these comorbidities are underreported. Regardless, patients with underlying conditions should be monitored carefully.7,11. However, the presence of comorbidities does not necessarily lead to severe complications. In a study of 27 breast cancer patients with underlying conditions (hypertension in 15 patients, diabetes in 6 patients, and pulmonary disease in 6 patients), Kalinsky *et al*. reported that 74% of patients did not require hospitalization, and none required invasive ventilation. However, five patients required oxygen therapy. Follow-up of this patient showed that only one patient, an 87-year-old male patient with multiple comorbidities and a history of smoking, died of complications.12. In a study of hospitalized SARS-CoV-2 patients, Yifan Meng *et al*. found that patients with a history of cancer had a worse prognosis and higher mortality (29.4%) than those without cancer (10.2%). This higher risk may be due to postoperative effects, a weakened immune system due to anticancer therapy, and inflammation in the tumor microenvironment. In addition, cancer patients show elevated levels of C-reactive protein, ferritin, procalcitonin, IL-2, and IL-6, as well as an increased erythrocyte sedimentation rate, indicating a proinflammatory state.

In a study of four COVID-19 patients with cancer and co-morbidities (e.g. diabetes and hypertension), Wang *et al*. found a significantly higher risk of complications in patients with at least two comorbidities compared with one or no comorbidities. Consistently, in a large study of 1,590 patients (399 of whom had at least one underlying condition), Guan *et al*. found a higher hazard ratio in patients with comorbidities. Notably, a recent study reported that patients with metastatic cancer had the highest COVID-19 mortality rate. Future research is needed to determine whether cancer stage is an independent risk factor for severe COVID-19. A number of studies and case reports have addressed the course of COVID-19 in cancer patients. Several studies have reported that the presence of comorbidities, in addition to malignancy, further compromises the patient's immune system. Cancer patients are often older, have dyspnea, and a history of smoking, all of which are risk factors for severe COVID-19. In a study of nine COVID-19 patients, Zheng *et al*. reported that three patients had severe symptoms; one of these patients died of multiorgan failure three days after the onset of symptoms. The median time from symptom onset to hospitalization was four days.15 In another study, Hrusak *et al*. showed that among nine children with cancer who contracted SARS-CoV-2, none of them required treatment in the ICU. In this study there are data regarding the sex of patients suffering from COVID-19 which in this study consisted of 301 male patients and 590 female patients.. Compared to men, women tend to experience COVID-19 more frequently. Toll-like receptors (TLR) and other immune-related genes present on the X chromosome are involved in the detection of single-stranded RNA viruses such as SARS-CoV-2.

Innate immune cells are more active in women, making phagocytosis and elimination of infected cells more effective. Estrogen is also known to increase alpha-estrogen receptors in cytotoxic T lymphocytes, increasing interferon production. Thus, the virus evokes a stronger cytotoxic immune response in women, possibly contributing to a milder COVID-19 sequence.17 Several studies have shown the prevalence of COVID-19 in males is higher than females. In one study it was found that SARS-CoV-2 infection tends to be found in older people with male sex and generally has comorbid diseases that can lead to fatal respiratory conditions such as ARDS. Of the 99 COVID-19 patients in the study, a total of 67 men and 32 women were found. In the study of Yung *et al*. (2020), 35 people (67%) of the 52 adults who experienced a critical condition due to COVID-19 were men and 17 others (33%) were women. However, in another study, it turned out that a 1:1 ratio between the sexes of men and women was obtained from 140 COVID-19 patients with an average age of 57 years. The overwhelming evidence suggests a higher burden of COVID-19 in men than in women. This gender difference in COVID-19 incidence and mortality was observed early on during the pandemic in China, where the death rate from COVID-19 was 2.8% in men and 1.7% in women. An epidemiological case study from Italy confirmed higher rates of SARS-CoV-2 infection in men. Male cancer patients were found to be 79% more likely to contract SARS-CoV-2 than women (Di Giacomo, 2020).

Men express higher levels of ACE2, the entry receptor for SARS-CoV-2. Men are also more likely to smoke or have co-morbidities, such as hypertension, diabetes, and obesity. Active smoking further increases the level of ACE2 expression in the lungs, facilitating the binding of SARS-CoV-2 to alveolar cells. In addition, smoking alters the androgen-to-estrogen ratio, increases TMPRSS2 expression and facilitates SARS-CoV-2 replication. Various studies have shown that men have higher levels of immune mediators associated with poor COVID-19 outcomes, including TNFSF13B, CCL23, and IL-16. Although estrogen is thought to enhance humoral immune responses, testosterone appears to do the opposite, possibly contributing to the lower antibody titers seen in men.19 Prostate cancer and COVID-19 have multiple risk factors, driving age (>50), gender (male), comorbidities, behavioral factors (alcohol and tobacco use), and high TMPRSS2 expression. Androgen signaling regulates the expression of ACE2 and TMPRSS2, which were observed conspicuously in the urogenital organs (prostate and testes) and lungs. The combined immunosuppressive and oncogenic effects of androgen signaling dysregulation in prostate cancer patients may make them more susceptible to SARS-CoV-2.19.

In a cohort of 9648 COVID-19 patients, 2.2% of patients had prostate cancer. The mortality rate in these patients was 23.7%, much higher than in male patients with other malignancies (12.7%). Similarly, intubation rates are higher in patients with prostate cancer. In the same study, prostate cancer patients receiving androgen-deficient therapy were four times less likely to contract SARS-CoV-2. In another study of 4,532 patients, 9.4% had tumors. Among these patients, 118 had prostate cancer (2.6%), 66.1% of whom required hospitalization, and 15.3% died. Together, these findings suggest that men have a higher risk of developing severe COVID-19 than women. In staging based on AJCC 8 in this study, 1 patient had stage 2 cancer, 3 patients had stage 3 cancer, and as many as 8 patients had stage 4 cancer.

According to Zhang, L. *et al*. (2020) in his research, 10 (35.7%) of a total of 28 cancer patients with COVID-19 were in stage IV cancer. Of the 10 cancer patients with stage IV, there were 7 patients (70%) who experienced severe events. Meanwhile, there were 18 patients who were in stages I, II, and III (64.3%). Of the 18 patients who were in stages I, II, and III, there were 8 patients (44.4%) who experienced severe events (Zhang, 2020). In the literature by Kalinsky *et al*. described 27 COVID-19 patients (median age 56 years) with a history of breast cancer (mostly with stage 1-3 breast cancer); 74% of patients did not require hospitalization, none required invasive ventilation, and 5 of them required oxygen therapy. Vaugnat *et al*. examined 76 patients with active breast cancer, 59 of whom were diagnosed with COVID-19. Among breast cancer patients diagnosed with COVID-19, 39 were hormone receptor (HR)-positive, 10 were HER2/neu-positive, and the remaining 10 had triple-negative breast cancer. Additional comorbidities, such as hypertension and diabetes, were reported in 36% of patients. Hospitalization was required for 28 patients, and none of them received antiviral or immunomodulatory agents; 76% of patients recovered, and 7% died. The severity of COVID-19 can be classified based on mild, moderate and severe symptoms. In this study, the number of patients with mild degrees was 3 people, at moderate degrees as many as 5 patients, and in severe degrees as many as 4 patients.The study by Dai *et al*., 2020 found that in cancer co-incidence COVID-19 patients, the incidence of lung cancer was found in 2 patients (50%). There was 1 patient (50%) had severe/severe condition. Whereas in breast cancer: 1 patient (25%) and no patient had a severe/severe condition.23 In bladder cancer, 1 patient (25%) was found and 1 patient (100%) had a severe/severe condition. Meanwhile, Liang *et al*., 2020 found the incidence of lung cancer in 5 patients (27.8%) and 1 patient (20%) experienced the incidence of severity. The incidence of other cancers besides lung cancer was 13 patients (72.2%) and there were 8 patients (61.5%) experiencing the incidence of severity 5

Zhang, L. *et al*. in 2020 found COVID-19 patients, lung cancer incidence was 7 patients (25%), esophageal cancer was 4 patients (14.3%), breast cancer was 3 patients (10.7%), laryngocarcinoma cancer was 2 patients (7.1%), liver/liver cancer in 2 patients (7.1%), prostate cancer in 2 patients (7.1%), cervical cancer in 1 patient (3.6%), gastric cancer in 1 patient (3.6%), colon cancer in 1 patient (3.6%), rectal cancer in 1 patient (3.6%), endometrial cancer in 1 patient (3.6%), ovarian cancer in 1 patient (3 ,6%) and testicular cancer in 1 patient (3.6%).21 Yung *et al*. of 52 cancer and COVID-19 patients it was found that severe disease was associated with the following factors: use of immunosuppressants such as steroids ($p = 0.001$); hemodynamic decompensation patterns such as severe acute respiratory syndrome ($p < 0.001$), myocardial injury ($p = 0.04$), and shock ($p = 0.02$); and extensive serum inflammatory markers, such as lymphopenia, and elevated levels of IL-6, D-dimer, C-reactive protein (CRP), procalcitonin, and lactate dehydrogenase (LHD) ($p < 0.05$).7 In this research, The need for ICU care with the use of a ventilator in COVID-19 patients is usually required in patients with severe symptom severity. In this study, it was found that all patients with severe symptoms, namely 4 patients were treated in the ICU using a ventilator.In a study by Boileve in 2020, found that as many as 33 COVID-19 patients were admitted to the ICU, 17 patients did not have cancer and 16 had cancer. Twenty-three patients required mechanical ventilation, resulting in 4 deaths (among them two patients with cancer). Two patients required extracorporeal membrane oxygenation (ECMO) and were referred to a dedicated ICU. Ten patients did not require mechanical ventilation (all with cancer), resulting in two deaths. Eight patients were still in the ICU on mechanical ventilation, 6 died (18%), and 9 were discharged home (27%). From this study, it was found that 2 COVID-19 patients with a cancer incidence died, namely those diagnosed with cervical cancer and breast cancer and the remaining 10 patients recovered and went home for outpatient treatment. Two series in Europe confirmed that advanced age predicts higher mortality. Stropa *et al*. also found that female sex ($p = 0.04$), multiple primary tumor locations such as genitourinary and hematologic ($p = 0.02$) and elevated CRP ($p = 0.047$) were associated with higher mortality in a series of 25 cancer patients with COVID -19 in northern Italy (Plasencia General Hospital).24 The study by Vuagnat *et al*. in Paris included 59 patients with breast cancer and found that high blood pressure ($p < 0.05$) was also associated with severe infection. There is no relationship between the extent of lung lesions due to COVID-19 and the extent of previous radiation therapy or pulmonary sequelae.25 Martin-Moro *et al*. found that poor performance on the patient's quality of life (ECOG) scale ($p = 0.016$), active neoplasia ($p = 0.021$), platelets/anemia ($p = 0.016$) and elevated procalcitonin ($p = 0.016$) were associated with mortality in a series of 34 cases of hematological neoplasia in Madrid. Mehta *et al*. found, in 218 New York cases, that factors associated with an increased risk of death were older age (>65 years) ($p = 0.0006$), heart disease ($p = 0.012$) and coexisting chronic lung disease. ($p = 0.0003$), ICU requirement ($p < 0.001$) and extensive serum inflammatory markers such as D-dimer ($p = 0.002$), DHL ($p = 0.01$) and lactate ($p = 0.001$). Neither chemotherapy, immunotherapy nor radiotherapy were associated with an increased risk of death.26. The Cancer and COVID-19 Consortium conducted a case series of 928 adult patients from the United States, Canada, and Spain with active cancer or with prior neoplasia and with severe acute respiratory syndrome due to COVID-19. Of the total patients, 13% died, thus confirming the association described in previous studies with advanced age (OR = 1.84, 95% CI: 1.53-2.21), cancer activity (OR = 5.2, 95% CI: 2.77-9.77), number of higher comorbidity (OR = 4.5, 95% CI: 1.33-15.28), poor ECOG performance (OR = 3.89; 95% CI: 2.11-7.18); and added the following factors: male gender (OR = 1.63; 95% CI: 1.07-2.48) and smoking status (OR = 1.6; 95% CI: 1.03-2 ,47). No association was found with race, obesity, type of cancer, or with treatment performed in the 4 weeks prior to infection.27

Conclusion

It was found that 12 patients (1.34%) had COVID-19 and cancer, of which 11 patients with COVID-19 and cancer came from H. Adam Malik Hospital and 1 patient came from USU Hospital Medan withthe most cases of breast cancer are 3 cases and most of them have COVID-19moderate degree.

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