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Analysis Of Predictors In The Case Of Covid-19 Based On Clinical, Laboratory And Radiological Descriptions In The Emergency Surgery Case Of Hospital In Surabaya Indonesia

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ABSTRACT

Background: Covid 19 is a virus that has been officially designated by the World Health Organization since March 11, 2020 as a pandemic. Limited human resources, natural resources and time, as well as the outbreak of this disease made it impossible for PCR-19 SWAB to be carried out in all groups, so a system was formed to classify patients as needed. Then, in the case of emergency surgery, patients who already have signs and symptoms based on the underlying disease, require an immediate response in treatment so that predictors are needed.

Aims: To analyze the predictor factors of COVID-19 cases Emergency Surgery at one of the hospital in Surabaya, Indonesia, without considering comorbid factors and diseases that were carried out for emergencysurgery.

Methods: This research is an analytical observational study with a cross sectional design. The sampling technique is total sampling.

Results: In a prospective search of emergency surgery patients, data were obtained for 501 patients, of which 380 patients met the inclusion criteria and 121 patients were excluded. This data was analyzed prospectively with the distribution characteristics of male as many as 135 (35.5%) and female as many as 245 (64.5%) patients. Based on logistic regression statistical tests in emergency surgical patients, the independent variables that had a significant relationship with the PCR swab were symptoms of fever or a

history of fever in the last 14 days, respiratory symptoms, swab antigen, and chest X-ray.

Conclusion: Symptoms of fever or a history of fever in the last 14 days, respiratory symptoms (cough, flu, sore throat, shortness of breath), antigen swab and photos have a significant relationship with PCR swab, where P < 0.05 so that it can be used as a predictor factor in the patient's initial diagnosis.

INTRODUCTION

Covid 19 is a virus that has been officially designated by the World Health Organization since March 11, 2020 as a pandemic case that has become a global concern with its mortality rate that continues to increase to date (Park et al., 2020). PCR-19 SWAB is still the gold standard in diagnosing COVID-19. The limitations of human resources, natural resources and time, as well as the outbreak of this disease, make it impossible to carry out PCR-19 SWAB action on all radiologists (Susilo et al., 2020).

On the one hand, WHO issued a COVID-19 scoring system, which the system can be adapted and modified as a simple diagnostic system that can be applied locally based on specific regional conditions. Based on research conducted by Huang, the most common clinical symptoms in COVID-19 patients were fever (98%), cough (76%), and myalgia or weakness (44%). Other rare symptoms include coughing up 28% phlegm, 8% headache, 5% coughing up blood, and 3% diarrhea. As many as 55% of the patients studied had dyspnea. Lymphocytopenia was found in 63% of patients with a lymphocyte count of less than 1x109/L (M. J. Huang et al., 2016). Another study also found lymphocytopenia in 83.2% of patients, and thrombocytopenia in 36.2% of patients (Guan et al., 2020). We reported cases of severe thrombocytopenia that occurred during the treatment of COVID-19 patients with thrombocytopenia occurring in 16 of 194 patients and platelet count in 3 of 16 patients less than 50,000/mm3 (Granat et al., 2021). Mild thrombocytopenia with a platelet count of 122,000/mm3 on day 7 of infection was also reported (Holshue et al., 2020).

In a multivariate analysis, 29% of patients tested positive for SARS-CoV-2, where the associated variables studied with the diagnosis of COVID-19 were leukocyte count 7.7 × 103 mm-3, LDH > 273 U/L, and chest X-ray abnormalities. A predictor score was created for the diagnosis of COVID-19, with an area under the ROC curve of 0.847 (95% CI 0.77-0.92), a sensitivity of 96%, and a specificity of 73.5%. After bootstrapping, the corrected AUC for this model was 0.827 (95% CI 0.75–0.90) (Vieceli et al., 2020). RSUD dr. Soetomo is one of the main referral hospitals in eastern Indonesia (type C), with various and quite a lot of cases of emergency surgery.

In case of emergency surgery, an immediate response is needed in handling. Given the many laboratory variables in the scoring system that have been implemented, where not all parameters can be checked before emergency surgery, as well as the high clinical variation of COVID-19, it is difficult to complete the initial screening in full without delaying surgery. For this reason, researchers are trying to simplify the results of previous studies related to research variables that are suspected to have a strong contribution in establishing the diagnosis of

COVID-19. Without considering the underlying disease that may contribute to the infection parameters, the researcher will analyze the predictor factors of respiratory symptoms, fever/history of fever in the last 14 days, leukopenia, lymphocytopenia, thrombocytopenia, NLR, antigen swab, and chest X-ray with the incidence of COVID-19 19 at the Emergency Surgery Hospital Dr. Soetomo Surabaya.From that, the aims of this study to analyze the predictor factors of COVID-19 cases Emergency Surgery at RSUD Dr. Soetomo without considering comorbid factors and diseases that were carried out for emergencysurgery

METHOD

This study was structured based on the observational analytical research method with a cross sectional design. This research was conducted in emergency surgery cases at OK IRD RSUD Dr. Soetomo Surabaya, Indonesia. While the population in this study were surgical patients who underwent surgery at the OK Emergency RSUD Dr. Soetomo.

Management of this research data using bivariate analysis with Chi-Square test followed by bivariate analysis with logistic regression test. In this study, an assessment was carried out with a new simpler system as an initial predictor based on the inclusion and exclusion criteria that had been described in the research method. Where the independent variable as a predictor of COVID-19 is taken based on clinical symptoms that often appear based on previous studies, as well as several supporting examinations that are suspected to have a strong, easy, and affordable predictor role.

RESULT

Characteristics of Emergency Surgery Patients Based on Age and Gender in dr. Soetomo Period July - September 2021

In a prospective search of emergency surgery patients during the period July-September 2021, data were obtained for 501 patients, of which 380 patients met the inclusion criteria and 121 patients were excluded. This data was analyzed prospectively with the distribution characteristics of 135 (35.5%) male and 245 (64.5%) female patients. Then, it was known that the percentage of patients with respiratory symptoms was 23.94%, all of which had lymphocyte levels >1100 (negative), then 82.41% of these patients had chest X-ray abnormalities and 69.33% had positive PCR swab results.

Analysis of the Relationship with SWAB PCR in Emergency Surgery Patients at RSUD dr. Soetomo

Statistical analysis was continued to determine the effect of respiratory symptoms (cough, sore throat, flu, shortness of breath), fever symptoms and/or history of fever in the last 14 days, leukopenia (<5000), lymphocytopenia (<1100), increased NLR (>3.13), thrombocytopenia (<150,000), antigen swab, chest X-ray, on the results of the PCR swab at the same time the patient first came to the emergency department and had an indication for emergency surgery.

Table 1. Logistics Binary Regression Test Results

Binary Regression Test Results	Coefficient regression	Description
Hosmer and lemeshow test	0,163	model according to data
Omnimbus tests of model coefficients	0,001	There is an effect of at least one of the independent variables (X) on
Variabel in the equation	-	-
Model summery (neglected value of Rs)	43,0%	
Classification table Overall percentage	85,3%	

Table 2. Effect of respiratory symptoms, fever and/or history of fever in the last 14 days, leukopenia (<5000), lymphocytopenia (<1100), increased NLR (>3.13), thrombocytopenia (<150,000), antigen swab, chest X-ray, on PCR swab results Based on overall logistic regression test

Independent Variable	Coefficient Regression	p	OR (95%CI)
Symptoms of fever/History of fever	1,436	0,001	4,204 (1,952-9,055)
Last 14 days (X1)	1,425	0,001	4,159 (2,098-8,245)
Respiratory tract symptoms (X2)	-0,805	0,362	
Leukopenia (<5000) (X3)	0,588	0,055	
Lymphocytopenia (<1100) (X4)	-0,460	0,355	
NLR (>3.13) (X5)	-0,003	0,997	
Thrombocytopenia (<150,000)	2,449	0,001	11,580 (5,012-26,756)
(X6)	0,811	0,009	2,215(1,223-4,143)
Antigen Swab (X7)	-2,167	0,001	
Chest X-ray (X8)	$\frac{1}{(1+e^{-(3,275+(-1,425\,X_1)+(-1,436\,X_2)+(-2,499\,X_7)+(-0,811\,X_8))}}$		
constant	= 43,0 %		

Respiratory tract symptoms, fever/fever history, antigen swab, and chest X-ray affect the results of the PCR swab as the gold standard for COVID-19 diagnostics. The effect of changes in the variables above has an influence on the diagnosis of COVID-19 by 43%, while 57% is due to other factors that were not studied.

DISCUSSION

Characteristics of Research Subjects

This research was conducted at dr Soetomo Hospital, Surabaya, Indonesia, in patients undergoing emergency surgery requiring anesthesia. In accordance with the COVID-19 SOP, all patients who come to the Emergency Room are subjected to an initial examination for COVID-19 screening.

Based on the SOP procedure for emergency surgery that applies at RSUD dr. Soetomo, prior to emergency surgery, coordination and cooperation between related disciplines is needed, especially the surgery and anesthesia divisions in providing optimal services known as perioperative examinations to prepare to recognize and anticipate risks that may occur. In this study, data observations were carried out at one time where the dependent variable and independent variable were taken simultaneously, known as a cross sectional design which was carried out prospectively. The total number of emergency surgery patients from July to September 2021 was 501 patients, of which 380 patients met the inclusion criteria, namely aged 17-75 years and not currently on COVID-19 treatment.

Based on emergency medical conditions, there were 4 patients who required re-emergency surgery during the study period, bringing the total number of patients admitted to this study to 497 patients. The characteristics of this study showed that the percentage of female patients was higher than the percentage of men with a median age of 35 years. On the other hand, based on the characteristics of the distribution of diagnoses as an indication for emergency surgery, the distribution of emergency surgery patients with the most diagnoses was obstetric patients was 161 patients (42.36%) of which 159 were gravida (41.84%) and 2 gynecological patients (0.52%).

It is known that thrombocytopenia is one of the parameters studied as an independent variable which is seen to be related to the results of the PCR swab. Thrombocytopenia is found in 6% to 10% of pregnant women in addition to anemia which is the most common hematological disorder found in pregnancy or known as physiological anemia. There are many potential causes of pregnancy-associated thrombocytopenia some of which occur in pregnancy, while others can also occur in the nonpregnant state. Pregnancy is associated with a variety of other metabolic, immunological, and homeostatic changes that require careful consideration when trying to determine the cause of thrombocytopenia in a particular individual.

Thrombocytopenia is one of the laboratory findings that is often found in pregnant women, but based on this study it did not show significant data. Thus, it can be seen that the thrombocytopenia in this study deserves to be a research variable without providing a

significant bias in influencing the results of the thrombocytopenia study in COVID-19.

Based on this study, it was also found that 91 patients with symptoms of the upper respiratory tract, either cough, runny nose, shortness of breath, or sore throat all had a leukocyte value > 5000, of which 75 patients had pulmonary radiographs indicating an infiltrate/consolidation, and 16 patients without with chest X-ray abnormalities. Where the total number of positive PCR swab patients was 57 patients with the highest number 52 patients having 100% chest X-ray abnormalities. In 289 patients without respiratory symptoms, all leukocyte data > 5000, and 30.79% had chest X-ray abnormalities, and 52.63% patients were found without chest X-ray abnormalities with 100% negative PCR swab results.

The relationship of clinical symptoms, laboratory examinations, and chest X-ray examination with SWAB PCR in Emergency Surgery Patients at RSUD dr. Soetomo

Based on logistic regression statistical tests in emergency surgery patients, the independent variables that had a significant relationship with PCR swab were symptoms of fever or history of fever in the last 14 days, respiratory symptoms, swab antigen, and chest X-ray where $P < 0.05$. Based on the overall logistic regression test values obtained R square 43%. Thus, it is known that symptoms of fever, respiratory tract, antigen swab, and chest X-ray can be mutually reinforcing predictors in establishing the diagnosis of COVID-19 which will be confirmed by PCR swab by 43% and the other 57% are predictors that were not studied. Then, based on the results of the partial logistic regression test, the highest percentage of COVID-19 predictors was in the order of respiratory tract symptoms (23.7%), fever symptoms/fever history in the last 14 days (18.2%), antigen swab (17.3%) , chest X-ray (15,4%).

The relationship between clinical symptoms of fever and/or history of fever with SWAB PCR in Emergency Surgery Patients at dr. Soetomo

Fever is one of the symptoms often found in COVID-19 patients. Symptoms of fever were found when the patient first entered the hospital as many as 43.8% of cases, then while in hospital it increased to 88.7% (Guan et al., 2020). In this study, there were symptoms of fever or a history of fever during the last 14 days in patients with positive PCR swab results, where P 0.001 < 0.05, with an OR of 4.204 (1.952-9.055) which means that patients with fever symptoms have a 4.204 times stronger risk. in diagnosing COVID-19 (positive PCR) compared to patients who are not accompanied by symptoms of fever.

This is supported by several previous studies which found clinical fever as the most common symptom found in systematic reviews and meta-analyses registered with PROSPERO. The prevalence of fever in adult COVID-19 patients is high, but 54.14% of pediatric COVID-19 patients do not show initial clinical symptoms. The prevalence and risk of mild and moderate fever is higher than that of high-grade fever (Islam et al., 2021).

Based on previous research data, the most common symptoms were fever (87.9%), dry cough (67.7%), fatigue (38.1%). More than 40% of fevers in COVID-19 patients had peak temperatures between 38.1-39°C, while 34% had fevers of more than 39°C(C. Huang et al., 2020).

Fever is a condition where the body temperature rises above the normal range of the

body characterized by a body temperature above the normal value. Fever is the most dominant symptom in COVID-19. Fever when the patient was admitted occurred in 43.8% of cases, some patients who came to the hospital without fever, then during hospitalization increased by 88.7%(Guan et al., 2020). Increased activity of cytokines secretes TNFα, IFN-γ, IL 1, IL4, IL6 at appropriate levels, activating cellular immunity and non-specific immunity (Wahyuniati & Maulana, 2015).

The relationship between clinical symptoms of the respiratory tract with SWAB PCR in Emergency Surgery Patients at RSUD dr. Soetomo

SARS-CoV-2 is one of seven types of coronaviruses, including those that cause severe illnesses such as Middle East Respiratory Syndrome (MERS) and Sudden Acute Respiratory Syndrome (SARS). Other coronaviruses cause most of the colds that affect us year-round, but are not a serious threat to healthy people.

COVID-19 is a disease caused by SARS-CoV-2 which is also known as respiratory tract infection. It can affect the upper respiratory tract (sinuses, nose, and throat) or the lower respiratory tract (throat and lungs).

In this study, p 0.001 < 0.05, which means that the clinical finding factor in the form of respiratory tract symptoms is statistically significant in predicting COVID-19 through PCR swab results. This is in accordance with several previous studies described in table 6.4, which found symptoms of cough 67.8%, runny nose 4.8%, sore throat 13.9%, and shortness of breath 18.7% (Guan et al., 2020).

On the other hand, respiratory symptoms were combined into a single variable which included cough, flu, sore throat and shortness of breath. The hope of this unification of respiratory symptoms is to make it easier and nothing is missed in diagnosing the early signs of COVID-19 symptoms, which is a disease with a high transmission rate, so that it can help prevent or break the chain of transmission. In addition, the study sample was carried out on patients who had various underlying diseases for emergency surgery, so that the variation in symptoms could be false positive or false negative.

The relationship between Leukopenia, Lymphopenia, and NLR with SWAB PCR in Emergency Surgery Patients at RSUD dr. Soetomo

The first confirmed case of SARS-CoV-2 infection in the United States had a slight decrease in white blood cell count within 1 week of onset. A study showed that on admission showed leukopenia (25%) and lymphopenia (63%). Furthermore, in a larger sample study, only 9% of COVID-19 cases showed a decrease in leukocytes, while the proportion of lymphopenia was still as high as 35%.

As COVID-19 disease progresses, neutrophilia appears in some cases, and patients with severe critical lung conditions show this airway is to make it easier and nothing to miss in diagnosing early signs of covid-19 which is a disease with a high transmission rate, so that it can help prevent or break the chain of transmission. In addition, the study sample was carried out on patients who had various underlying diseases for emergency surgery, so that the variation in symptoms could be false positive or false negative.

Although fever is the main symptom often encountered in COVID-19 patients, respiratory tract symptoms remain a common symptom with mild to severe variations which are the reason patients come to the hospital which is often associated as one of the parameters in assessing the severity of COVID-19.

The relationship between Leukopenia, Lymphopenia, and NLR with SWAB PCR in Emergency Surgery Patients at RSUD dr. Soetomo

The first confirmed case of SARS-CoV-2 infection in the United States had a slight decrease in white blood cell count within 1 week of onset. An initial study of 41 patients with COVID-19 admitted to Jin Yin-tan Hospital showed that on admission showed leukopenia (25%) and lymphopenia (63%). Furthermore, in a larger sample study, only 9% of COVID-19 cases showed a decrease in leukocytes, while the proportion of lymphopenia was still as high as 35%.

As COVID-19 disease progressed, neutrophilia appeared in some cases, and patients with severe critical lung conditions showed higher neutrophil counts. Examination of laboratory tests such as blood cell counts; In lymphopenia, a neutrophil/lymphocyte ratio (NLR) 3.13 is associated with a severe severity and prognosis in COVID-19. Based on the data from 61 cases with COVID-19 that was analyzed, it was found that the neutrophil-lymphocyte ratio (NLR) is a useful predictive factor for the likelihood of critical illness. In this investigation, patients were divided into two groups based on the threshold NLR values (low risk, < 3.13; high risk, 3.13) and age (< 50 years or 50 years).

Grouping for severe COVID-19 incidence was based on age and NLR; found that in the 50-year-old population, patients with high risk of NLR (50%) were prone to developing severe disease compared to those with low risk of NLR (9.1%) ($p = 0.0195$). Compared with these studies, MuLBSTA (multilobular infiltration, lymphocytopenia, bacterial coinfection, smoking history, hypertension, and age) (0.762; 95% CI, 0.585-0.938) and CURB-65 (level of consciousness, urea, respiratory rate, blood pressure, age ≥ 65 years) (0.700; 95%CI, 0.505-0.896), the NLR had a higher area under the curve (0.849; 95%CI, 0.707-0.991), indicating that the NLR performed better in early prediction of the occurrence of the condition. critical (Liu et al., 2020).

In this study, leukopenia and lymphocytopenia were descriptively increased in patients with positive PCR swabs, but based on the chi-square test it did not show a significant relationship, as well as the NLR value. NLR >3.13% was found in almost all emergency surgery patients, namely 89.7%, this is not in accordance with previous studies which were suspected to be related to the study sample having different characteristics.

Although not directly related to leukopenia, lymphocytopenia, and increased NLR, these parameters are still helpful in early prediction of COVID-19 when combined with other variables. Based on the results of the logistic regression, P 0.001 < 0.05. It can be concluded that the influence of the 8 parameters of this study was found to have an influence on the diagnosis of COVID-19 by 43%, while 57% was caused by other factors that were not studied.

The relationship between Thrombocytopenia and SWAB PCR in Emergency Surgery Patients at RSUD dr. Soetomo

Thrombocytopenia is the result of high consumption or decreased production of platelets due to lung damage. Activation of the monocyte-macrophage system exacerbates immune damage to the lungs and other tissues, leading to increased D-dimer, prothrombin time, and platelet consumption.

By identifying the lung as an organ with potential hematopoietic function and is part of the terminal platelet production organ, which accounts for about 50% of the total platelet production. On the basis of previous studies proposed that the lung is the reservoir for most megakaryocytes and hematopoietic progenitor cells, suggesting thrombocytopenia may be caused by lung damage. Lung damage in COVID-19 can also induce RAS activation and cause abnormal function of vascular endothelial cells and the coagulation system, as well as platelet activation and aggregation, which can further increase platelet consumption.

In the initial 41 COVID-19 cases reported by Jin Yintan Hospital, thrombocytopenia (platelet count < 100 × 109/L) was present in 5% (2/40) of them. Furthermore, a 99 case report showed 12% with thrombocytopenia. A study of 1099 patients with COVID-19 showed a higher incidence of thrombocytopenia (platelet count < 150 × 109/L) of 36.2%. Further analysis found that severe cases (57.7%) showed an increased susceptibility to thrombocytopenia than non-severe ones (31.6%) ($p < 0.001$), and the mean platelet count in severe cases was significantly lower than in severe cases. non-severe cases: 137.5 (IQR 99.0–179.5) × 109/L vs 172.0 (IQR 139.0–212.0) × 109/L, ($p < 0.001$).

In this study, there was no significant relationship between thrombocytopenia (<150,000) and PCR swab results as a definitive diagnosis of COVID-19, where P 0.997 > 0.05, and descriptively, thrombocytopenia was found to be 5.8%. This is different from several previous studies which made thrombocytopenia a predictor in prognosing COVID-19, while this study was used as a predictor of COVID-19 diagnosis. In an epidemiological study conducted in Bali, thrombocytopenia levels did not show any difference in COVID-19 patients, most of whom had normal values (Mardewi, 2021). Another study also observed a significantly higher IPF% in the severe COVID-19 group (11.9 vs 3.9%, $p<0.001$) with IPF ($p=0.014$, odds ratio = 2,000, 95%CI: 1,149-3,482) and is an independent predictor of severity. The curve value of the recipient's operating characteristics was 0.879 ($p<0.001$, 95%CI: 0.784-0.943) to determine the severity of pneumonia. IPF% has sensitivity and specificity values of 69.5 and 92.4% for detecting disease severity.

The relationship between antigen swab and PCR SWAB in emergency surgery patients at dr. Soetomo

The Rapid Antigen Test for SARS-CoV-2 COVID-19 is a rapid chromatographic immunoassay to detect SARS-CoV-2 nucleocapsid (N) antigen through respiratory tract specimens. This diagnostic test can detect a specific protein from the SARS-CoV-2 coronavirus that causes COVID-19. These substances can be proteins, polysaccharides, and others. When infected with a virus, the body will naturally respond by secreting certain specific proteins. The virus that causes COVID-19 has several recognized antigens, such as nucleocapsid

phosphoproteins and spike glycoproteins. This test will detect viral antigens through the line of color particles to be conjugated. The antigen-antibody color particle complex migrates through capillary forces and is captured by the anti-SARS-CoV-2 monoclonal antibody coated on the test region (T). The intensity of the colored test line (T) depends on the amount of SARS-CoV-2 antigen presented in the sample.

The antigen swab method is carried out by taking a sample of respiratory fluid (mucus) from the nose or the part of the throat behind the nose with a long cotton swab. The accuracy of the antigen swab test has a high level of accuracy, but sometimes there are still false negative test results if the level of the corona virus in the body is low. For this reason, the antigen swab test is more accurate when the symptoms of COVID-19 appear or when the amount of virus in the body is high enough. If the results of the antigen swab test are doubtful, for example, the results are negative but there are symptoms of COVID-19, a PCR test is needed to ensure the accuracy of the diagnosis.

Of the 454 respiratory samples, 60 (13.2%) were positive, and 394 (86.8%) negative for SARS-CoV-2 RNA by real-time RT-PCR assay. The duration from baseline to laboratory testing in suspected COVID-19 cases and contact individuals ranged from 0 to 14 days with a median of 3 days. The sensitivity and specificity of the SARS-CoV-2 rapid antigen detection test were 98.33% (95% CI, 91.06–99.96%) and 98.73% (95% CI, 97.06–99.59%) , each. One false-negative test result came from a sample with a high real-time RT-PCR cycle threshold (Ct), while five false-positive results came from a preoperative patient specimen (Chaimayo et al., 2020).

This is in accordance with the results of the study which found that there was a significant relationship between the results of the antigen swab and the results of the PCR swab, where P 0.001 < 0.05, with an OR of 11,580 (5.012-26,756), which means that the antigen swab can predict COVID-19 by 11,580 stronger than patients with negative antigen swabs. Although it can be a predictor of COVID-19, patients with a positive antigen swab can still have a negative PCR swab, which means that there is a false negative on the antigen swab.

The relationship between Thorax X-ray and SWAB PCR in Emergency Surgery Patients at RSUD dr. Soetomo

Most of the studies on diagnostic methods featured here refer to adults; However, studies specific to the age group of children show very similar data. The data presented suggest that the diagnosis of COVID-19 should be based on clinical manifestations, contact history, imaging tests, laboratory tests, and not only on serological tests and the search for viral genetic material. In addition, strategies to improve the sensitivity, specificity, and speed of diagnosis are fundamental.

Chest X-ray may show rare bilateral consolidation with ground glass opacity, peripheral/subpleural images, especially in the lower lobes. Pulmonary involvement tends to be bilateral (87.5%), multilobular (78.8%), more frequent in the inferior lobe with a more peripheral distribution (76%). Septal thickening, pleural thickening, bronchiectasis, and subpleural involvement were not common.

In this study, the role of chest X-ray in predicting COVID-19 through PCR swab results was statistically significant, where P 0.005 < 0.05, this is supported by many previous studies.

Images showing the presence of COVID-19 disease identified by a board-certified radiologist. Evaluation of 3000 chest X-ray images, and most of these tissues achieved a sensitivity level of 98% (± 3%), while having a specificity of about 90% (Minaee et al., 2020).

CONCLUSION

From this research it can be concluded that symptoms of fever or a history of fever in the last 14 days, respiratory symptoms (cough, flu, sore throat, shortness of breath), antigen swab and photos have a significant relationship with PCR swab, where $P < 0.05$ so that it can be used as a predictor factor in the patient's initial diagnosis. Then, it was also concluded that in emergency surgery patients with one or more symptoms of fever or a history of fever and or accompanied by respiratory symptoms, the probability of causing COVID-19 was 43%, and the other 57% were predictors not studied. In addition, the percentage of COVID-19 predictor factors based on the highest order is the order of respiratory tract symptoms (23.7%), fever symptoms/fever history in the last 14 days (18.2%), antigen swab (17.3%), chest X-ray (15.4%).

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