POST-SURGICAL MEASURES DURING THE COVID-19 PANDEMIC

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ABSTRACT

Coronavirus Disease 2019 (COVID-19) has a very diverse clinical presentation ranging from asymptomatic, mild, moderate to severe symptoms and even death. The increase in the number of cases took place quite quickly and spread in a short time. The current COVID-19 pandemic has major consequences for healthcare services. Strict adherence to the use of Personal Protective Equipment (PPE), and environmental hygiene improves safety and prevents virus transmission. Postoperative management is an important phase for patients with suspected/confirmed COVID-19 because it can be associated with slower recovery, a longer length of stay, and more complications. Surgeons, nurses, and medical staff have equal responsibilities in postoperative management. Postoperative consultations can be carried out via telemedicine to perform follow-up surgery on patients with clinical COVID-19. The use of telemedicine-based services prevents the risk of potential exposure to medical personnel. Taking the recommended steps in general surgical services can optimize the health services provided to confirmed COVID-19 patients and reduce the risk of occupational transmission to other patients and health professionals.

Keyword : COVID-19, postoperative, surgery, telemedicine

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1. INTRODUCTION

The emergence of pneumonia cases in Wuhan, Hubei Province, China in late December 2019 was initially unknown and in early January 2020, the Chinese government later announced that the cause of the case was a new type of coronavirus later named SARS-CoV-2 (Severe Acute Respiratory Syndrome Coronavirus 2). This virus causes Coronavirus Disease 2019 (COVID-19) where the virus has a high mutation rate with a very diverse clinical presentation ranging from asymptomatic, mild symptoms, moderate to severe even death.

The World Health Organization (WHO) has declared COVID-19 a pandemic and the disease has spread to more than 200 countries with a total of COVID-19 cases in the world confirmed as many as 17,731,998 (17.7 million) cases of which 681,979 patients died in the eight months since the first case was discovered.[1] The increase in the number of cases is quite rapid and spreads in a short period of time. Indonesia reported the first case on March 2, 2020, and the case very quickly spread throughout Indonesia. The SARS-CoV-2 virus includes a family of corona viridae with structures including genetic material, capsid made of proteins and an additional capsid- protecting coat called a fat-composed envelope.[2]

Some people infected with this virus do not show any symptoms and the most common symptoms are fever, fatigue, dry cough, aches and pains, stuffy nose, runny nose, runny nose, headache, conjunctivitis, sore throat, diarrhea, loss of smell, and tanning or skin rash. Transmission of COVID-19 occurs through droplets containing the SARS-CoV-2 virus that enter the body through the nose, mouth, and eyes. The longest incubation period of the virus can be up to 14 days with an average of 5-6 days. WHO recommends examining molecular detection

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methods/NAAT (Nucleic AcidAmplification Test) such as RT-PCRexamination for all patients suspected of being infected with COVID-19.[3]

Patients with COVID-19 without symptomsor with symptoms may come to the surgical specialist service either through ER in the case of emergency department or through polyclinics.

Many examination procedures for diagnostics and actions are performed by surgeons who are in direct contact or in close contact with patients,of course, this makes the risk high of contractingCOVID-19. Measures to prevent the transmission of the COVID-19 virus become very important both for the purpose of protectingthemselves and preventing the transmission of the virus to others.

2. METHOD

In this discussion, the research used is observational analytic by using a cross sectional approach, namely by reviewing the results of medical records of patients diagnosed with breast cancer in the Laboratory of Anatomical Pathology. This effort was obtained by HER-2 immunohistochemical examination data Dr. Pirngadi Medan hospital in 2018-2019. This research uses a total sampling of samples. Samples were taken from all medical records of patients with a diagnosis of breast cancer at the Anatomical Pathology Laboratory that conducted HER-2 immunohistochemical examination. A study analysis to see whether there is a relationship between grading histopathology and histopathological types with HER-2 immunohistochemistry profiles in breast cancer patients.

Then the statistical test used the chi-square test. If the value on p-value ≤ value (0.05), the decision is otherwise H_0 rejected. In a sense, there is a significant relationship between groups of one and the other. If the value p ≥ value (0.05), then the decision failed to be H0 rejected, meaning that there was no correlation between group one and another.[6]

3. RESULTS

Redistribution breast cancer based on age

Here is data on breast cancer patients who perform HER-2 immunohistochemical examination based on age. Data is divided by description per year, as in the following table.

Table 1: Age of breast cancer patient who have an HER-2 immunohistochemical examination

Age	201		2019		The total year 2018-2019	
	n	%	n	%	Frequency (n)	Percentages (%)
25-39 years	7	20.0	1	3.2	8	12,1%
40-49 years	17	48.6	12	38.7	29	43,9%
50-59 years	9	25.7	16	51.6	25	37,9%
60-65 years	2	5.7	2	6.5	4	6,1%

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	Total	35	10	31	100	66	100%

Most breast cancer patients are in the age range of 40 to 49 years with a total of 29 patients (43.9%). In 2018 the most incidence at the age of 40- 49 years with a total of 17 patients (48.6%). Then in 2019, the age group of 50-59 years was the most incidence with the number of 16 patients (51.6%).

Redistribution stage breast cancer patients who have done HER-2 immunohistochemical examination. As for the explanation.
Here is the stage of breast cancer patients who have done HER-2 immunohistochemical examination. As for the explanation. As for the explanation as follows.

Table 2: Breast cancer stadium in patients with the HER-2 immunohistochemical examination

Stadium	2018		2019		Total 2018-2019	
	n	%	n	%	n	%
Stadium 0	0	0	0	0	0	0
Stadium I	0	0	7	22.6	7	10.6
Stadium II	3	8.6	8	25.8	11	16.7
Stadium III	23	65.7	12	38.7	35	53.0
Stadium IV	9	25.7	4	12.9	13	19.7
Total	35	100	31	100	66	100

Stadium III increased with the largest number reaching 35 cases or 53%. While stage IV the case of stages I and II. Then there was also an increase in the percentage of cases, namely stages III and IV.

Redistribution type of histopathology of breast   cancer patients who have done HER-2 immunohistochemical examination
The data explained above is displayed as follows.

Table 3: Types of histopathology of breast cancer patients with HER-2 immunohistochemistry examination

Histopathology types	2018		2019		Total 2018-2019	
	n	%	n	%	n	%
Invasive ductal carcinoma	31	88.6	25	80.6	56	84.8
Invasive lobular carcinoma	0	0	2	6.5	2	3.1
Other carcinomas	4	11.4	4	12.9	8	12.1
Total	35	100	31	100	66	100

Most breast cancer patients with the type of histopathology of invasive ductal carcinoma with the number of 56 cases (84.8%), in 2018 the most incidence with the type of histopathology of invasive ductal carcinoma with the number of 31 cases (88.6%). In 2019 with the type of histopathology of invasive ductal carcinoma is still the most common occurrence with the number of 25 cases (80.6%).

Grading distribution of histopathological breast cancer patients who have done HER-2 immunohistochemical examination.

Data on histopathological *grading* are also featured in the results of this study. The distribution is displayed as follows.

Table 4: Grading histopathology of breast cancer patients with HER-2 immunohistochemical examination

Grade	2018		2019		Total 2018-2019	
	n	%	n	%	n	%
X	0	0	0	0	0	0
I	5	14.3	6	19.4	11	16.7
II	22	62.8	20	64.5	42	63.6
III	8	22.9	5	16.1	13	19.7
Total	35	100	31	100	66	100

The results than the grading assessment of histopathology of patients affected by breast cancer 2018-2019 grade II allegedly with the largest number of cases (63.6%). Then in 2018 histopathological grading was rated a lot in grade II with 22 cases (62.8%). Lastly, in 2019 grade II which is the largest number of cases is 20 cases (64.5%).

Distribution of the results of HER-2 breast cancer immunohistochemical examination results.

Patients with breast cancer who do HER-2 immunohistochemical examination will get the following results.

Table 5 Distribution examination results from HER-2 breast cancer patients

HER-2/ Cerb-B2	2018		2019		Total 2018-2019	
	n	%	n	%	n	%
0	9	25.7	9	29.0	18	27.3
+1	1	2.9	0	0	1	1.5
+2	5	14.3	3	9.7	8	12.1
+3	20	57.1	19	61.3	39	59.1
Total	35	100	31	100	66	100

In table 5, we can see based on the results of HER-2

breast cancer patients 2018-2019 +3 (positive 3) is the most 39 cases (59.1%). In 2018 HER-2 was at +3 (positive 3) with 20 cases (57.1%). In 2019 +3 (positive 3) is still the most with 19 cases (61.3%).

The relationship of histopathological grading with the results of the HER-2 immunohistochemical examination.

The relationship of the two variables has gone through the statistical variable significance test stage, the Chi-Square test. It found a significance value of $p = 0.492$ in the test to provide a conclusion of independent variable grading histopathology had no significant association to HER-2 immunohistochemical examination in breast cancer patients.

Table 6: Grading histopathology with the results of HER-2 immunohistochemical examination

Histopathology gradings	HER-2				Total	Significance
	0	+1	+2	+3		
Grade 1	3	0	3	5	11	
Grade 2	12	1	5	24	42	

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Grade 3	3	0	0	10	13	p = 0,492
Total		18	1	0	39	66

Relationship of histopathology with the results of the HER-2 immunohistochemical examination.

The relationship of these two variables is through a significant statistical test, the Chi-Square test and we found a significance value of p= 0.208 in the test so that it can be conclusive, variable independent with the type of histopathology has no significant relationship toHER-2 immunohistochemical examination in patients with breast cancer.

Table 7: Types of histopathology with the results of HER-2 immunohistochemical examination

Histopathological types	HER-2				Total	Significances
	0	+1	+2	+3		
Invasive ductal carcinoma	15	1	8	32	56	
Invasive lobulus carcinoma	2	0	0	0	2	p = 0,208
Other carcinomas	1	0	0	7	8	
Total	18	1	8	39	66	

4. Discussions

Breast cancer cases are based on age range according to data from Muhammad Anggo at Arifin Ahmad Hospital (2013) that breast cancer patients are dominated by the age range of 40-49 years (41.38%). This is in accordance with the theory that the age of over 40 years has a greater tendency to get the risk of breast cancer. The risk of breast cancer increases with age. This is thought to be related to exposure to other risk factors that take a long time to induce the occurrence of cancer. Like studies comparing the incidence of breast cancer by age category by age, the incidence of breast cancer in the Asian region tends to be more frequent at the age of 40 and 50 years, while the incidence in western countries is more frequent at the age of 60 and 70 years.

Based on existing data, it is known that the proportion of HER-2 immunohistochemical examinations in 2018 and 2019 compared to breast cancer cases is still very small. The difference in the proportion of HER-2 immunohistochemical examinations with breast cancer cases can occur because the cost of this examination is also quite expensive so not all patients are able to do so.

HER-2 expression can be found in normal cells and this protein functions in the process of growth and differentiation of various normal epithelial. In breast cancer cells that express excessive HER-2, the growth activity and differentiation of cancer cells will increase so that the histopathological grade is higher. Grading histopathology and immunohistochemical examination are prognosis factors for breast cancer.

The same results were obtained in the study of Rahman and Sampepanjung (2010). The results of the study said HER-2 / Neu negative in as many as 12 people or 37.50%. Then HER-2/Neu "+1" found 2 peo ple or 6.30%. Her2/Neu "+2" numbered 5 people or 15.60%, and HER-2/Neu

"+3" numbered 13 people or 40.6%. The appraisers "-" and "+1" can be categorized negatively. While the assessment of "+2" and "+3" tested positive, so it was found that HER-2/Neu expression was found to be 18 patients or 56.20%.

Based on the results of the study found a relationship between the two variables were tested significantly statistics, namely the Chi-Square test. From the results of the test, there is a significant value of p = 0.492 so that it can be conclusively independent variable grading histopathology does not have a significant relationship to the examination of HER-2 immunohistochemical in breast cancer patients, so this study cannot prove the above theory because many factors affect the body. The examination of HER-2 breast cancer immunohistochemistry.

Various factors that can affect the immune- staining process include tissue handling. Tissue handling is served as the most important factor to produce staining of quality immunohistochemical. That is with a network fixation that uses Neutral Buffer Formalin (NBF) of 10%. The next step is immersed with a volume equivalent to 20-30x, then the tissue can produce good morphological details. Antibodies that can be used are monoclonal antibodies and polyclonal antibodies. As well as protocols include blocking reagents selection, epitope retrieval, incubation duration, antibody dilution, temperature, as well as detection methods.

Rilke et al research found HER-2 positive at 3.9% in grade I, 20.4% in Grade II, and 38.9% in grade III. In a case study conducted by Hoff et al, 388 cases found that HER-2 was positive ≤1% grade I, 17% for grade II, and 23% for grade III.

Ali Akbar Firasi's 2016 research found the comparative value between HER-2 with the degree of differentiation obtained from both variable relationships through significant statistical tests, namely the Chi-Square test. The value of significance obtained is p= 0.218 in the sense that the independent variable HER-2 has no significant relation to the degree of differentiation of women with breast cancer. The results are in line with Rahman et al research in the Oncology Surgery section of Dr. Wahidin Sudirohusodo Hospital and networking hospitals in Makassar in 2010. The results of the study found no significant relationship between PR, ER, and HER-2.

The factors that cause a large number of breast cancer patients at Dr. Pirngadi Hospital to come with locally advanced stages are unclear, but it is suspected that screening against breast cancer in Indonesia is still individualized so early detection programs are still not effective and efficient. Lack of information, geographical location, education, many advertisements explaining alternative medicine, lack of diagnostic tools, such as mammography, ultrasound, and lack of medical skills in diagnosing breast malignancies allow cancer patients already at the stage.

HER-2 overexpression expression increases at higher grades, causing cancer to become more invasive and more likely to occur. Invasive ductal carcinoma has a greater risk of lymph node involvement compared to other types.

The relationship between the two variables thus falls into the realm of a statistical significancetest, namely the Chi-Square test. Found a significance value of p=0.208 in the test so that it can be conclusive, independent variables of histopathological type do not have a significant relationship to HER-2 immunohistochemical examination in breast cancer patients. so this study cannot prove the theory above because of many factors that affect the examination HER-2 immunohistochemical breast cancer patients.

Similar results were obtained by Shokouh Taghipour Zahir from Shahid Sadoughi General Hospital, Yazd, Iran in the range of 2008-2014. HER- 2 overexpression was examined in 514 patients, with 182 breast cancers showing HER-2 overexpression. Invasive ductal carcinoma and in situ have the highest frequencies of HER-2 overexpression (34.5% and 34.9%). However, there was no significant association between the two types of breast cancer and HER-2 overexpression with fisher $p = 0.63$.

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