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General surgery practice in Aceh rural hospital during the COVID-19 pandemic: a descriptive cross-sectional study

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ABSTRACT

Background: COVID-19 pandemic is one of the biggest issues that we have faced and has had a significant impact on healthcare practice worldwide. Increasing COVID-19 cases requires the surgical department to reorganize all the patient treatment to prevent infection. This study aims to find out the pattern of general surgery care during the COVID-19 pandemic compared to the non COVID-19 period and to know better to prepare for surgical patients' treatment in the future.

Method: This is a descriptive cross-sectional study. We studied the important points of a complete range of the patient at the department of surgery outpatient, inpatient, and operation theatre of Datu Beru Hospital from 1 March 2020 to 31 December 2020 for the COVID period and 1 March 2019 to 31 December 2019 for the non-COVID period.

Result: There were 2822 outpatient visits during the non-COVID period and 1949 patients during the COVID period. The total decrease in outpatient visits was 30.93% during the pandemic. Female outpatient visits are 51.25% during COVID period. There is 36.49 % reduction in total operation during pandemic. Total elective cases were 78,68% decrease over the pandemic period from 591 to 126 cases. There were 45% reduction inpatient admissions during pandemic.

Conclusion: There is a reduction in number of general surgery cases during COVID-19. Some elective surgeries can still be performed with triage according to the guideline. All actions are following protocol and Personal Protection Equipment so that the safety of surgeons, staff, and patients is maintained.

Keywords: COVID-19, elective cases, general surgery practice.
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INTRODUCTION

Coronaviruses are RNA viruses that can spread through humans that cause respiratory disease. Coronavirus disease 2019 (COVID-19) was initially found in Wuhan China in December and spread rapidly all over the world. The World Health Organization announced COVID-19 as a pandemic in March 2020.[1] COVID-19 pandemic is one of the biggest issues that we have faced and has had a significant impact on healthcare practice all over the world.[2]

Increasing COVID-19 cases requires the surgical department to reorganize outpatient consultations, limit inpatients and reschedule operations to prevent the spread of infection. The surgical department must use a new protocol for the safety of patients and staff.[3] The decrease in the number of treatments and operations is also due to the transfer of some staff to intensive care and COVID-19 centers to help the treatment of COVID-19 patients. this condition causes the surgical services to become stretched.[4]

The increase in the number of cases of COVID-19 in Indonesia causes patients to fear going to the hospital and government regulations on restrictions on activity outside the home are also one factor in the decrease in the number of visits.[5]

This study aims to find out the pattern of general surgery care during the COVID-19 pandemic compared to the non COVID-19 period and to know better to prepare for surgical patients' treatment in the future.

METHOD

This is a descriptive cross-sectional study done at the department of surgery in Datu Beru Hospital Aceh. We studied the important points of a complete range of the patient at the department of surgery outpatient, inpatient, and operation theatre in Datu Beru Hospital from 1 March 2020 to 31 December 2020 for the covid period and 1 March 2019 to 31 December 2019 for the non-covid period. All patients who received services from the department of surgery in Datu Beru hospital during the duration of COVID and non-COVID were included in this study. Data collected from the register of patients in the department of surgery. Data then analyzed descriptively by frequency and percentage.

RESULT

Total outpatients who come to consult and get treatment in the surgical department can be seen in table 1. It is indicated that

Table 1. Total number of outpatient cases during COVID-19 and Non-COVID-19 period.

	Gender		Total
Period	Male	Female	
Non COVID Period	1544	1278	2822
COVID Period	1326	623	1949

Table 2. Cases in operation theatre.

	Non COVID Period		COVID Period	
Characteristics	**Frequency**	**Percentage (%)**	**Frequency**	**Percentage (%)**
Gender				
Male	608	54.92	412	58.60
Female	499	45.07	291	41.39
Total	1107	100	703	100
Operation case				
Emergency	24	2.16	45	6.40
Urgent	257	21.95	253	35.98
Semi urgent	235	22.49	279	39.68
Elective	591	53.38	126	17.92
Total	1107	100	703	100

Table 3. Cases admitted and discharged from department of surgery ward.

	Gender		Total	Average Hospital Stay
Period	Male	Female		
Non COVID Period	1268	742	2010	5 days
COVID Period	742	363	1105	3 days

the whole range of patients visiting the outpatient department has significantly reduced all through COVID duration as compared to the non-COVID period. There were 2822 outpatient visits during the non-COVID period and 1949 patients during the COVID period. The total decrease in outpatient visits was 30.93% during the pandemic. Male outpatient visits decreased by 14.11% from 1544 to 1326 and female outpatient visits also decreased by 51.25% from 1278 to 623 during the pandemic period. Reduction in the number of patients in the course of the COVID period is in all likelihood due to the fact of limited activity outside the home all over the country (Table 1).

The total number of operation procedures done during COVID is lower than non-COVID period. There is 36.49 % reduction in total operation during pandemic from 1107 to 703 cases. Total elective cases were 78.68% decrease over the pandemic period from 591 to 126 cases. The decrease in the number of elective cases in the operating room is due to policies to limit elective cases. During the pandemic, elective surgery is restricted to protect staff and patients from the risk of infection. Elective surgery can be rescheduled or postponed to make room for emergency or urgent surgery in the operation theatre.

However, the whole quantity of emergency cases that underwent surgical operation improved during the COVID period compared to the Non-COVID period. As a result of government policy to limit activities at home, people's fear of going to the hospital due to COVID-19 and restrictions on urgent, semi-urgent, and elective operations have worsened the patient's condition. The proportion of urgent and semi-urgent case in operation theatre during both periods is almost same (Table 2).

The whole number of hospital stays has reduced in the non-COVID period (average 3 days Vs. 5 days) (Table 3). There are 2010 admission at some stage in the Non-COVID period and 1105 admissions throughout COVID length (45% reduction) inpatient admissions. the decrease in the percentage of male (41%) and female (45%) inpatients is similar during the COVID period.

DISCUSSION

The current COVID pandemic was unprecedented, so no one was once in a position to predict the consequences of such a crisis on General Surgery patients. The first fundamental aspect that must be considered in carrying out all operations during the COVID-19 pandemic is self-protection properly. Self-protection during surgery and proper use of Personal Protective Equipment (PPE) such as surgical caps, disposable masks, goggles or transparent barriers, gloves, disposable overcoats, and powered air-purifying respirators (PAPR).[6] The Centers for Disease Control and Prevention (CDC) encouraged rescheduling elective surgeries and shifting elective inpatient surgical approaches to outpatient settings, when feasible. To guide the decision-making process, surgical societies have installed criteria for triage and prioritization. Triage standards are meant to guide surgical scheduling following the hospital burden of the pandemic phase. Surgical prioritization is meant to discover the methods that can be postponed and these that need to not, balancing the chance between disorder progression and viral exposure.[7] The NHS recommendations suggest classifying sufferers requiring surgical operation by four stages of surgical priority. Operations are distinguished in emergent (< 24 h), urgent (< seventy two h), Semi urgent (< 2 weeks), elective (deferrable for up to 4 weeks, three months, and past three months), presenting a precise list of surgical procedures for every class.[8] During the pandemic, a surgical operation that can be deferred for up to four weeks would possibly still be performed, balancing the hazard between the underlying situation and the viral spread. This category includes most cancer operations and surgical operations for complicated benign stipulations unresponsive to

medical therapy American College of Surgeons (ACS) identifies unique tiers of surgical approaches according to the acuity of surgical procedure (high, intermediate, and low) in accordance to Elective Surgery Acuity Scale and patient's regularly occurring condition.[4] These are examples of surgical case type stratified. Life-threatening emergency, acute hemorrhagic shock, bowel obstruction/perforation, peritonitis, necrotizing fasciitis are included in emergent indication. Appendicitis/cholecystitis, open fractures, surgical infection and femur shaft fractures are examples for urgent cases. Closed Fractures, flap/wound closures and spinal fractures are included in semi-urgent cases. Elective cases include hernia repair, reconstructive surgery cancer surgery, and biopsy.[9]

Datu Beru hospital is a referral hospital for more than 3 districts of Aceh province. Based on observations the number of elective surgeries in Datu Beru hospital has decreased by 78% by ACS and NHS recommendations to classify and prioritize elective cases to reduce the likelihood of infection spreading. Outpatient consultation during pandemic at department of surgery in our hospital has reduced because limitation elective surgery. The total decrease in outpatient visits was 30.93% during the pandemic. The decrease in the number of outpatient visits is also due to restricting outdoor activities in our country. Some countries implement lockdowns and cancellations of all semi-urgent and elective surgery.[10-12] On the other hand, if delaying semi-urgent and elective procedures are necessary, the doctor should be able to assess the risk to the progress of the disease and the quality of life of the patient.[7] Many strategies are used to continue to perform elective surgery while still protecting surgeons, staff, and patients from the spread of COVID-19. According to the guidelines recommendations all high-risk patients who will undergo semi-urgent and elective surgery who have been in contact with patients confirmed by COVID-19 either symptomatic or asymptomatic must be delayed and undergo a polymerase chain reaction (PCR) test before performing the surgical procedure. If the patient's PCR test is twice negative, the surgeon can perform a surgical procedure. If the patient's PCR test is positive, the patient must undergo isolation and surgery must be delayed until the patient recovers. All these procedures must be performed before the patient enters the operating room and anesthesia.[3,7]

During the pandemic, it is very important to ensure the emergency and urgency of patients. The guidelines agree that all acute patients should be considered as COVID-19 until proven otherwise. If emergency and urgency surgery is required, it must be ensured that PPE is good and waiting for PCR results.[7] The operating theater needs to be cleaned and disinfected and a high-efficiency filter changed. Cleansing ought to be achieved by using detergent and water accompanied by using one thousand ppm bleach solution for all tough surfaces in the running theater. The disinfection time must be longer than 30 min. The working theater should be closed for at least 2 hours, and the next operation needs to be performed after the laminar go with the flow and airflow growing to become on.[3]

The care of patients on the surgical ward during this pandemic is different. All incoming patients must be screened before entering to avoid nosocomial transmission of the virus. Screening and evaluation of patients before entering to identify fever or respiratory symptoms and close history contact with patients COVID-19.[13] The recommended practices for admitting surgical patients to hospitals for all surgical procedures contain redefining the direction approaches and implementing strict screening for COVID-19.[6] During the COVID period, there was a 45% reduction of inpatients in the surgical ward of Datu Beru Hospital. It avoids needless patient traffic in the hospital and reduces the chance of cross-infection between elective patients, hospital visitors, and COVID-19 patients, preventing the spread of contamination from the hospital to the neighborhood.[7]

CONCLUSION

There is reduction in number of general surgery cases during COVID-19 with significant reduction in number of elective cases. The data obtained is not from patients infected with COVID-19 but in hospitals affected by the pandemic. Some elective surgeries can still be performed with triage, prioritize and limit the number of patients according to the guideline. All actions are following protocol and Personal Protection Equipment so that the safety of surgeons, staff, and patients is maintained. Screening before admission inpatient and performing an operation is the main step to protect against the spread of the virus.

ETHICAL STATEMENT

All data were taken from registry records in Department of surgery without utilize medical records, therefore ethical clearance is not mandatory.

CONFLICT OF INTEREST

The author declares there is no conflict of interest regarding the publication of this article.

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The current study doesn't receive any specific grant form government or any private sectors.

AUTHOR CONTRIBUTIONS

WNS was responsible for study design, conceptualization, data analysis and, Literature search. HMH was responsible for data acquisition, study design, conceptualization and literature search, manuscript preparation and review. All the authors had review final manuscript version.

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