ORIGINAL RESEARCH

Characteristics of outpatient gynecology oncology services before and after COVID-19 pandemic at Ulin Regional General Hospital, Banjarmasin, Indonesia

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ABSTRACT

Objective: The aim of this study was to investigate the characteristics of the Gynecology Oncology Outpatient Clinic at Ulin Hospital Banjarmasin before and after the COVID-19 pandemic.

Materials and Methods: This descriptive study utilized existing patient data from the Gynecology Oncology Outpatient Clinic at Ulin Hospital Banjarmasin covering the period from March 2019 to February 2021. The study received ethical approval from the Ulin General Hospital ethics committee with clearance number 10/I-Reg Research/RSUDU/23. The collected data was presented in a tabular format to compare the service characteristics before the pandemic (March 2019 - February 2020) and after the pandemic (March 2020 – February 2021).

Results: During the periods of March 2019 – February 2020 and March 2020 – February 2021, there was a reduction of 19% in patient visits. The number of patients undergoing treatment also decreased, from 1081 patients (53.9%) in the period of March 2019 – February 2020 to 926 patients (46.1%) in the period of March 2020 – February 2021. Notably, there was a decrease in the number of patients undergoing surgical procedures, dropping from 76 patients (70.4%) in the period of March 2019 – February 2020 to 32 patients (29.6%) in the period of March 2020 – February 2021. A similar trend was seen in patients receiving chemotherapy, with the count decreasing from 1005 patients (52.9%) in the period of March 2019 – February 2020 to 894 patients (47.1%) in the period of March 2020 – February 2021. These changes were attributed to various hospital measures implemented to address the COVID-19 pandemic, including a reduction in outpatient clinic visits and the temporary suspension of surgical procedures from March 2020 to October 2020 to minimize potential exposure.

Conclusion: The study highlights a noticeable decline in both the frequency of visits to the Gynecology Oncology Outpatient Clinic at Ulin Regional General Hospital Banjarmasin and the number of patients receiving treatment during the periods before and after the onset of the COVID-19 pandemic.

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Highlights:

1. The characteristics of gynecology oncology services at Ulin Regional General Hospital before and after the COVID-19 pandemic were evaluated.
2. There was a decrease of 19% in the number of visits by Gynecology Oncology Clinic patients at Ulin Regional General Hospital between the period of March 2019 - February 2020 and March 2020 - February 2021.

INTRODUCTION

Coronavirus Disease 2019 (COVID-19) is a global health issue that affects many aspects of life. Since its first appearance in Wuhan City, China, at the end of 2019, the number of morbidities and deaths due to COVID-19 has continued to grow. The number of COVID-19 patients in Indonesia has reached 1.76 million patients, with the number of patients dying reaching 48,876 people on May 21, 2021.[1]

The risk of COVID-19 complications is greater in groups with certain comorbidities, for example patients with a history of malignancy. Research by O'Neill, et al. stated that mortality due to COVID-19 with patients with cancer was 7.6%, relatively high compared to the mortality rate of COVID-19 in patients without comorbidities of 1.4%.[2] Research by Leibold et al involving six hospitals in New York stated that patients with gynecological cancer had more severe COVID-19 infection, of which 54.5% of patients needed hospitalization, 30.3% needed treatment in an intensive care unit, and 14% died from complications of COVID-19, showing a mortality rate much higher than the general population.[3] Cancer patients were 3.56 times more likely to suffer from severe symptoms than patients without a history of malignancy. This is suspected due to the presence of an active malignancy as well as oncology therapy that gives rise to a decrease in physical capacity and immunosuppression status. For this reason, interruption of therapy should be considered in patients with active COVID-19 infection until the patient recovers, especially if the therapy used is an immunosuppressive therapy that is cytotoxic.[4]

COVID-19 has had a devastating impact on all aspects of health services, including gynecology oncology services. A survey by the Italian Society of Gynecology (SIGO) stated that the impact of COVID-19 on gynecology oncology service practices reached 70%, and the decline in service quality reached 46%.[5] A survey by the Indian Association of Gynecology Oncology also stated that there were barriers to service during the COVID-19 pandemic. 71% of practitioners delayed elective surgery services. 52% of practitioners delayed new patient diagnostic services for up to two weeks, and even 27% of practitioners delayed services for up to six weeks. 54% of practitioners delayed the control schedule of patients who had been declared disease-free.[6] Research by Khazaeipour et al based in Iran states that visits to gynecology oncology clinics decreased by 63% in 2020 compared to 2019.[7]

Hospitals are one of the significant places of transmission of COVID-19, therefore high standards are needed to protect patients and staff of health workers. This can be an obstacle to providing services to patients, especially gynecology oncology patients, because it is necessary to select interventions based on disease priorities to minimize the transmission of COVID-19. Gynecology oncology health services, especially surgical therapy, need to be studied based on a priority scale, namely: availability of resources, prevalence of disease, characteristics of patients and diseases, and prediction of disease output if delayed. Top priority is given to patients with minimally invasive treatment as well as a prediction of short hospitalization times. Priority is also given to curative procedures with a high success rate at early-stage malignancies, as well as malignancies that require cytoductative surgery after neoadjuvant chemotherapy.[8]

Service management is also one of the important elements in preventing the transmission of COVID-19 during therapy. Health protocols and efforts to minimize contact are recommended to prevent transmission, for example: the implementation of consultations with telephone agreements, the use of indoor N95 masks, the implementation of social distancing, conducting remote consultations (if possible), reduction of procedures aimed at screening only (e.g. mammography and pap-smear in healthy patients), delays in measures in COVID-19 patients (except when in the emergency), separation of emergency operating rooms and elective surgeries, and so on.[9] People whose treatment for cancer is delayed by even one month have in many cases a 6 to 13% higher risk of dying, a risk that keeps rising the longer their treatment does not begin. The need for better understanding of the impact of treatment delay on outcomes has come into focus during the COVID-19 pandemic because many countries have experienced deferral of elective cancer surgery and radiotherapy as well as reductions in the use of systemic therapies, while health systems have directed resources to preparing for the pandemic. Based on this background, this study aims to see and evaluate the characteristics of outpatient gynecology oncology services at Ulin Regional General Hospital before and after the COVID-19 pandemic.

MATERIALS AND METHODS

This research was an analytical descriptive study conducted during the period from March 2019 to February 2021 at the Ulin Regional General Hospital, Banjarmasin, Indonesia, and had been registered to the Ulin General Hospital ethics committee with ethical clearance number 10/I-Reg Research/RSUDU/23. This study used secondary data from Gynecology Oncology Clinic patients at Ulin Regional General Hospital for the period of March 2019 – February 2021. The data

obtained in this study was in the form of descriptive data. The statistics used were descriptive statistics by describing the collected data and presenting them in tables.

RESULTS AND DISCUSSION

The data were divided into two distinct time frames: the pre-COVID-19 pandemic interval (March 2019 to February 2020) and the COVID-19 pandemic interval (March 2020 to February 2021). Within the Ulin Regional General Hospital, a total of 6833 patients were treated for gynecology oncology conditions. Specifically, during the period spanning from March 2019 to February 2020, there were 4069 patients (59.5%), and during the period from March 2020 to February 2021, there were 2674 patients (40.5%).

The dominant diagnosis observed throughout both time periods was cervical cancer, accounting for 1622 patients (57.2%) between March 2019 and February 2020, and 1212 patients (42.8%) between March 2020 and February 2021. The second most prevalent diagnosis in both intervals was ovarian cancer, comprising 896 patients (60.1%) from March 2019 to February 2020, and 596 patients (39.9%) from March 2020 to February 2021. Conversely, the least common diagnosis across both periods was uterine corpus cancer, encompassing 14 patients (93.3%) between March 2019 and February 2020, and 1 patient (6.7%) between March 2020 and February 2021.

Among the cohort of 2007 gynecology oncology patients treated at Ulin Regional General Hospital, 1081 patients (53.9%) received treatment during the March 2019 to February 2020 period, while 926 patients (46.1%) received treatment during the March 2020 to February 2021 period. A total of 76 patients (70.4%) underwent surgical intervention from March 2019 to February 2020, which decreased to 32 patients (29.6%) from March 2020 to February 2021. Similarly, 1005 patients (53.9%) underwent chemotherapy between March 2019 and February 2020, and 926 patients (46.1%) underwent chemotherapy between March 2020 and February 2021.

From 2007 gynecology oncology patients who underwent surgery and chemotherapy at Ulin Regional General Hospital, the outcomes, as detailed in Table 3, were as follows. In the period from March 2019 to February 2020, 918 patients (84.92%) experienced clinical improvement, and 68 patients (89.47%) received treatment in the postoperative intensive care unit (ICU). Notably, there were no reported deaths following procedures during this period. In contrast, during the period from March 2020 to February 2021, 648 patients (69.27%) were treated in the postoperative ICU, and no instances of disease stage progression were observed. Regrettably, there were 9 patients (0.97%) who succumbed to their conditions after receiving gynecology oncology therapy within the March 2019 to February 2021 period.

Table 1. Data on gynecology oncology patients at Ulin Regional General Hospital for the period of March 2019 – February 2021.

Diagnosis	March 2019 - February 2020		March 2020 - February 2021	
	n	%	n	%
Cervical cancer	1622	57.2	1212	42.8
Ovarian cancer	896	60.1	596	39.9
Cystic ovary neoplasm	812	60.4	533	39.6
Solid ovary tumor	310	70.9	127	29.1
Endometrial cancer	177	71.1	72	28.9
Vaginal cancer	74	67.9	35	32.1
Uterine corpus cancer	14	93.3	1	6.7
Gestational trophoblastic neoplasm	164	46.6	188	53.4
Total	4069	59.5	2764	40.5

Table 2. Data on gynecology oncology measures at Ulin Regional General Hospital for the period of March 2019 – February 2021

Treatment	March 2019 - February 2020		March 2020 - February 2021	
	n	%	n	%
Surgery	76	70.4	32	29.6
Chemotherapy	1005	52.9	894	47.1
Total	1081	53.9	926	46.1

Table 3. Output data of gynecology oncology therapy at Ulin Regional General Hospital for the period of March 2019 – February 2021.

Outcome	March 2019 - February 2020		March 2020 - February 2021	
	n	%	n	%
Clinical improvement	918	84.92	648	69.97
Intensive care post-surgery	68	89.47	0	0
Death	0	0	9	0.97

Global trends revealed a decline in gynecology oncology patient visits across diverse regions. Research by Rimmer et al., in the United Kingdom, underscored the impact of the COVID-19 pandemic on gynecological service units. An extensive 79.1% of units reduced in-person clinic interactions, while 88.5% deferred elective gynecology services, and 55.4% curtailed schedules for oncological interventions.[10] A survey conducted by the Italian Society of Gynecology (SIGO) further substantiated these observations, indicating that 70% of practices experienced COVID-19-induced modifications, accompanied by a 46% deterioration in service quality.[5] Similarly, the Indian Association of Gynecology Oncology reports that 71% of practitioners delayed elective surgeries, 52% delayed new patient diagnostic services for up to two weeks, and 27% extended service delays to six weeks. Furthermore, 54% of practitioners postponed follow-up appointments for previously cleared patients.[6] A study conducted by Khazaeipour et al. in Iran revealed a substantial 63% reduction in gynecology oncology clinic visits during 2020 compared to the pre-pandemic year of 2019.[7] The reduction in oncology patient visits is not solely attributed to external factors; patient concerns contributed significantly. Investigations by Lou et al. in the United States underscored the challenges imposed by the pandemic, with 50.8% of respondents encountering impediments to cancer therapy due to COVID-19 fears. Of those actively receiving cancer treatment, 71.9% expressed apprehension about contracting COVID-19 within healthcare settings, and 90.8% expressed anxiety over severe manifestations if infected.[11]

Correspondingly, Ray et al.'s research in an Indian cancer oncology center disclosed that 78% of patients apprehended COVID-19 exposure, with 51% manifesting profound fear due to concerns about fatal outcomes. This apprehension lead into delays in disease monitoring and evaluation. Gultekin et al.'s study underscored patients' cognizance of cancer as a COVID-19 vulnerability (73.2%), though only 17.5% demonstrated greater fear of COVID-19 than their cancer condition. In contrast, 71% manifested anxiety concerning cancer progression due to potential treatment delays. The average HADS (Hospital Anxiety and Depression Scale) scores reflected considerable anxiety and depression, registering at 8.8.[13]

In line with previous studies, this study underscored a pronounced decrease in patient visits post-COVID-19. Comparing patient visits between March 2019 to February 2020 and March 2020 to February 2021 revealed a significant 19% reduction. This decline was due to the imposition of patient visit limits, with a maximum of 25 patients at the Gynecology Oncology Clinic of Ulin Regional General Hospital, aimed at curtailing COVID-19 transmission.

Comparable patterns were found when considering procedural uptake, evidenced by a decrease from 1081 patients (53.9%) in March 2019 - February 2020 to 926 patients (46.1%) in March 2020 - February 2021. Remarkably, a policy shift temporarily suspended gynecology oncology surgeries from March 2021 to October 2021, resulting in a decline from 76 patients (70.4%) to 32 patients (29.6%). A similar decline in patients undergoing chemotherapy was also observed, from 1005 patients (52.9%) in March 2019 - February 2020 to 894 patients (47.1%) in March 2020 - February 2021.

The pandemic-induced condition was reflected in patient outcomes, revealing increased mortality rates during the pandemic (9 patients, 0.97%), surpassing pre-pandemic levels. Notably, the number of patients experiencing clinical improvement dropped from 918 (84.92%) to 648 (69.97%). Correspondingly, the rate of postoperative ICU treatments diminished due to a decline in surgical cases, potentially stemming from prolonged delay of elective services. The reduction of face-to-face clinic interactions further compounded delays in disease detection and therapeutic intervention.

In the context of the COVID-19 pandemic, service adaptations are imperative, guided by established standards, to both mitigate virus transmission and deliver optimal care. Institutional adherence to well-constructed Standard Operational Procedures (SOPs), informed by ethical principles and procedural values, underpins health facility readiness and excellence, in alignment with national guidelines. These SOPs should

allow for swift revisions, if warranted, within a 3–4-week timeframe to effectively respond to evolving pandemic dynamics.[14] The preparedness evaluation for health facilities embraces multiple facets, including the availability of personal protective equipment (PPE), functional blood banks, proficient surgical teams, nursing support, sterile equipment, room capacity, negatively pressurized operating rooms, specialized treatment spaces, and prompt emergency management. Effective scheduling, in accordance to available resources and individual patient needs, must be orchestrated across the hospital system to ensure patient-specific care.[15] Services falling short of minimal standards may detrimentally affect patients and potentially amplify viral transmission.[16]

Adjustments to therapy management for gynecology oncology patients during the COVID-19 pandemic are needed to ensure that each patient continues to receive optimal, adequate, and appropriate therapy according to patient needs. Various ways can be done to prevent the transmission of COVID-19 in health facilities, for example in outpatient clinics. It is necessary to limit visits, for example, only accepting new patient visits, consultations on acute oncology problems, as well as patients in active therapy programs. Restrictions on the number of clinicians, supporting health workers, residents and students (where possible) need to be carried out to prevent exposure. Face-to-face meetings should be diverted to telemedicine whenever possible, or done by appointment and limit the number of introductions.

Restrictions on examination measures that are not strictly necessary in asymptomatic patients also need to be considered, for example routine imaging examinations or serum markers.[17] The study by Quam et al. collected data through a survey of 188 gynecological cancer patients regarding the satisfaction rate of telemedicine use and obtained results that 80.5% of the participants were satisfied with telemedicine use and 54.8% recommended for telemedicine use in patients with similar conditions. The rest expressed concern that something would go wrong if they did not have face-to-face meetings, but in practice, telemedicine requires an adaptation, a thorough evaluation of the patient's condition and education of the patient.[18]

The operation is best done on a priority scale. Elective surgery can be delayed for 4 weeks in cases such as germ cell tumors, early-stage cervical cancer, high-risk uterine cancer, early-stage ovarian cancer, primary vulvar tumor resection. A longer delay (10 to 12 weeks) can be made in cases of early-stage uterine cancer or microinvasive cervical cancer that can be treated by local excision measures. Chemotherapy is preferred for patients with a percentage of chemotherapy success of more than 50% or adjuvant therapy which increases the probability of recovery by as much as 50% after surgery or radiotherapy. The lowest priority is given to patients receiving non-curative or palliative therapy with a moderate cure rate (15% - 50%) or life expectancy of less than one year.[19]

Protection of health workers needs to be carried out optimally. The use of personal protective equipment is carried out anytime and anywhere, as well as providing training on the use of personal protective equipment and identification of patients suspected of COVID-19. Personnel with significant immunocompromised and comorbid conditions are transferred to the administrative department, as well as the implementation of strict self-isolation in case of illness. Refreshment of insights about COVID-19 needs to be done regularly with online-based seminars.[20]

CONCLUSION

There was a decrease in the number of visits by Gynecology Oncology Clinic patients at Ulin Regional General Hospital, Banjarmasin, Indonesia, between the period of March 2019 - February 2020 and March 2020 - February 2021, as much as 19% due to the restrictions on the number of visits aimed at reducing exposure and preventing the transmission of COVID-19 during the pandemic. The service of gynecology oncology patients during the COVID-19 pandemic was carried out with health protocols and good service management to prevent the transmission of COVID-19. Preventive efforts carried out including limiting face-to-face meetings and regular supporting diagnostics in asymptomatic patients, conducting remote consultations or telemedicine whenever possible, providing surgical and chemotherapy therapy according to the priority scale, as well as protecting health workers through the use of personal protective equipment, dividing tasks according to health conditions, and providing training for health workers.

DISCLOSURES

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Conflict of interest

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Author Contribution

All authors have contributed to all processes in this research, including preparation, data gathering and analysis, drafting and approval for publication of this manuscript.

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