



COST OF ILLNESS ANALYSIS OF CANCER BREAST WITH MASTECTOMY ACTIONS AT PROF. DR. MARGONO SOEKARJO HOSPITAL, INDONESIA

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Article details:

Published: 30th July 2022



Abstract

Mastectomy is most often done as a therapy for breast cancer. It has a large cure rate but also mastectomy causes a large economic burden to patients and hospitals. This study aims to calculate the cost of illness of breast cancer in BPJS patients with a mastectomy in Prof. Dr. Margono Soekarjo Hospital. This quantitative research used a descriptive design, a sample study with 30 patients. The data sources used were primary data

obtained from interviews with questionnaires and secondary data obtained from the medical and financial records section at the Prof. Dr. Margono Soekarjo Hospital. Data analysis was done by the univariate cost of illness calculation. The results showed that the total cost of illness is IDR 311.133.434,00 with an average of IDR 10.371.114,00. The lowest cost of illness for respondents is IDR 5.023.500,00 while the highest cost of illness for respondents is IDR 18.772.800,00. The cost of illness is obtained from direct costs and indirect costs. The average direct cost is IDR 9,774,270.00 and the average indirect cost is IDR 596.884.078,00.

Keywords: *Cost of illness, breast cancer, mastectomy*

To cite this article :

Nabela Putri Yanuari. "Cost Of Illness Analysis Of Cancer Breast With Mastectomy Actions At Prof. Dr. Margono Soekarjo Hospital, Indonesia." *International Journal Of Health, Education And Social (Ijhes)* 5, No. 7 (2022): 1-8.



INTRODUCTION

Deaths caused by breast cancer are very high in developing countries. Breast cancer is the second leading cause of cancer death, trailing only lung cancer (Guntari and Suariyani, 2016). According to Anggorowati (2013), it is estimated that the number of breast cancer cases reaches more than 1,050,346 per year. Data in Indonesia in 2012 shows that cancer breasts occupy first place among the top 5 cancers in Indonesia, namely 48,998 cases with a mortality rate of 19,750. Cases of cancer breasts were found in Central Java in 2012 in as many as 11,341 cases, while in 2013 it increased to 11,511 cases (Ministry of Health Indonesia, 2013). From 2006 to 2017, the number of cases of cancer breast in Central Java was around 260,699, so it is estimated that in 2017 the number of cases of cancer breast is around 70,000 residents (Ministry of Health Indonesia, 2017).

One of the most common treatments for breast cancer patients is mastectomy. Mastectomy is an operation on rapture-affected breast cancer carried out at stages II and III (Harahap, 2015). Most mastectomies are performed because they have the highest level of recovery, but they impose a financial burden on the hospital, patients, and families (Dewi et al., 2004). According to a study by Radelli and Radice (2003) in the United States, the cost of cancer breast reached 156.7 billion US dollars indirect costs, while indirect costs reached 84.7 billion US dollars.

According to the data obtained from record medical hospital Prof. Dr. Margono Soekarjo, the number of mastectomy patients in 2018 was 339 patients, with level severity I totaling 267 patients, level severity II totaling 68 patients, and level severity III totaling 4 patients. Therefore, it is necessary to research the cost of illness of BPJS breast cancer patients with mastectomy at Prof. Dr. Margono Soekarjo Hospital to help make a policy health plan for breast cancer treatment.

METHODS

This study used a design study descriptive with calculation cost of illness. The method used in this study is cross-sectional with primary and secondary data collection. A study was done by prospective in patients with cancer breast with action mastectomy. The sample in this study is 30 breast cancer patients with a mastectomy who use BPJS. Variables in this study that is age, occupation, severity, nursing class, primary diagnosis, secondary diagnosis, length of stay, direct costs, indirect costs, and cost of illness. Instrument in this study is sheet stuffing record medical and recapitulation length of stay and cost direct as well as indirect cost questionnaire. The source of data used in this study is primary data sources, in the form of interviews with questionnaires, and secondary data sources in the form of notes medical records, and finance. Data analysis used is analysis univariate and cost. The cost of illness is calculated by adding up the direct and indirect costs.



RESULTS

1. Characteristics Respondent Based on Age, Occupation, Treatment Class, and Severity

The respondent in this study is a patient with cancer breast with an action mastectomy at Prof. Dr. Margono Soekarjo Hospital. Respondents totaling 30 patients BPJS participants. The following is a description of characteristic respondents in the form of age, occupation, class care, and rate severity.

Table 1. Distribution Frequency Age, Occupation, Treatment Class, and Severity Respondents at Prof. Dr. Margono Soekarjo Hospital

No	Characteristics Respondent	N	%
1	Age Patient (Year)		
	a. Adolescence (17-25 years)	0	0
	b. Mature early (26-35 years old)	2	6.7
	c. Adults (36-45 years)	9	30
	d. Elderly (46-55 years old)	11	36.7
	e. Elderly (56-65 years old)	7	23.3
	f. Seniors (>65 years)	1	3.3
	Total	30	100
2	Profession		
	a. Trader	2	6.7
	b. Labor / Farmer	4	13.3
	c. PNS/ Employee	2	6.7
	d. TNI/POLRI	0	0
	e. Retired	1	3.3
	f. Self-employed	4	13.3
	g. Housewife	17	56.7
	Total	30	100
3	Nursing Class		
	a. Class I	3	10
	b. Class II	7	23.3
	c. Class III	20	66.7
	Total	30	100
4	Severity _		
	a. Severity I _	12	40
	b. Severity II _	15	50
	c. Severity III _	3	10
	Total	30	100

Table 1. shows that the majority of respondents aged elderly early as 46-55 years old many as 11 respondents (36.7%) and the majority work as Housewife many as 17 respondents



(56.7%). Table 1. also show that the majority of respondent who uses class treatment III is 20 respondents (66.7%). Whereas the majority of level severity respondents in level severity II are 15 respondents (50%).

2. Characteristics Respondent Based on Primary and Secondary Diagnosis

Following this is diagnostic data main and diagnostic secondary BPJS cancer patient breast with action mastectomy at Prof. Dr. Margono Soekarjo Hospital.

Table 2. Distribution Frequency Main Diagnosis and Diagnosis Secondary Respondents at Prof. Dr. Margono Soekarjo Hospital

No	Main Diagnosis	Secondary Diagnosis	N	(%)
1	Malignant Neoplasm of Breast, Unspecified	Anemia in Neuroplastic Disease	17	56.7
		Anemia in Neuroplastic Disease, Cerebral Oedema, subarachnoid hemorrhage unspecified	1	3.3
		No there is a secondary diagnosis	12	40
Total			30	100

Table 2. shows that the main diagnosis of all respondents at Prof. Dr. Margono Soekarjo Hospital is *a malignant neoplasm of the breast unspecified*. Whereas part large secondary diagnosis respondent is *anemia in neuroplastic disease* as many as 17 respondents (56.7%).

3. Characteristics Respondent Based on Length of Stay (LOS)

Following This is *length of stay (LOS)* data take care stay respondent cancer breast with action mastectomy (cost directly) at Prof. Dr. Margono Soekarjo Hospital.

No	Length of Stay (LOS)	N	(%)
1	4	1	3.3
2	5	8	26.7
3	6	2	6.7
4	7	13	43.3
5	8	2	6.7
6	9	2	6.7
7	11	1	3.3
8	12	1	3.3
Total		30	100

Table 3. shows that *the majority of the length of stay (LOS)* taken care stay, respondents at Prof. Dr. Margono Soekarjo Hospital is 7 days as many as 13 respondents (43.3%).



4. Cost Overview Respondent

Table 4. Calculation Cost Direct BPJS Breast Cancer Patients with Mastectomy

Direct cost	The calculation results
Total	IDR 293.228.100.00
Average	IDR 9,774,270.00
Minimum	IDR 4,833,500.00
Maximum	IDR 18,318,800,000

Table 4. shows that the total cost of direct respondents at Prof. Dr. Margono Soekarjo Hospital is amounting to IDR 293.228.100.00 with an average cost of direct amounting to IDR 9,774,270.00. Cost direct lowest respondent is amounting to IDR 4,833,500.00 while cost direct highest respondent is amounting to IDR 18,318,800,000. Costs directly to the respondent consist of the cost of medicine, cost of service doctors and nurses fees action support, costs take care of stay and costs collected registration as rate house accumulated pain in rate hospital.

Table 5. Calculation Cost Indirect BPJS Breast Cancer Patients with Mastectomy

Indirect Cost	The calculation results
Total	IDR 17,905,334.00
Average	IDR 596,884.00
Minimum	IDR 168,000.00
Maximum	IDR 1,713,000.00

Table 5. shows that the total cost of no direct respondents at Prof. Dr. Margono Soekarjo Hospital is amounting to IDR 17,905,334.00 with an average cost of no direct as big as IDR 596,884.00. Cost no direct lowest respondent is amounting to IDR 168,000.00 while cost no direct highest respondent is amounting to IDR 1,713,000.00 Cost no directly to the patient covers cost lost productivity, cost transportation patient, cost transportation companion patients, and costs consumption.

5. Overview of Cost of Illness

Table 6. Calculation Cost of Illness BPJS Breast Cancer Patients with Mastectomy

Cost of Illness	The calculation results
Total	IDR 311.133.434.00
Average	IDR 10.371.114.00
Minimum	IDR 5,023,500, 00
Maximum	IDR 18,772,800,000

Table 4.6 shows that the total load cost sick (cost of illness) respondent cancer breast with action mastectomy of IDR 311.133.434.00 with an average of IDR 10,371,114.00. The lowest cost of illness for respondents is as big as IDR 5,023,500,00 whereas the highest respondent's cost of illness as big as IDR 18,772,800,00.



DISCUSSION

Based on results average research rate of house sick / expense direct patient cancer breast with action mastectomy is amounting to IDR 9,774,270.00. Cost direct lowest respondent is amounting to IDR 4,833,500.00 while cost direct highest respondent is amounting to IDR 18,318,800.00 This thing exceeds provision standard INA CBGs rates for average care stay class III that is amounting to IDR 9,003,066.00. Cost cancer breasts on respondents who reached IDR 18,318,800.00 for patient take care stay class III with level severity III very exceed the provisions of INA CBGs which only IDR 11,782,500.00 (Minister of Health Regulation No. 59, 2014).

According to study Purnamasari *et al* (2015) in dr. Wahid Sudirohusodo Hospital action mastectomy own difference negative with provision INA CBGs rates because own long and complicated *length of stay* (LOS) action operation. The size cost is directly caused by the length of the day take care stay (LOS). The average length of days take care stay is 7 days. Based on the results study *length of stay* (LOS) taken care stay respondent has an ideal standard for the average *length of stay* (LOS) taken care predetermined to stay Ministry of Health is 6 – 9 days care (Sudra, 2010). However, as many as 2 respondents (6.7%) have a *length of stay* (LOS) take care stay to exceed the standard that is with 11 days LOS take care stay and 12 days take care stay.

This thing is caused by high-level severity patient and the presence of additional diagnoses such as *anemia in neuroplastic disease, cerebral edema, subarachnoid hemorrhage unspecified* so time old recovery. This thing in line with the results study by Safitri and Kun (2012) who stated that patients with cancer breast with action mastectomy have a length of stay that exceeds the standard that has been determined consequence level severity more patients high and secondary diagnosis/ additional diagnosis after diagnosed cancer breast moment to do action mastectomy. For patients who have a secondary diagnosis, the majority is patient age continued. This thing because patients age carry on will easily experience disease other degenerative (Misnaniarti, 2017).

The cost of not directly bearing every BPJS cancer patient's breast with action mastectomy at RSUD Prof. Dr. Margono SoekarjoPurwokerto is as big as IDR 596,884.00. Cost no direct lowest respondent is amounting to IDR 168,000.00 while cost no direct highest respondent is amounting to IDR 1,713,000.00.

According to the results study by Nurdianto (2013) on patients with cancer breast with action mastectomy showing the burden cost no direct patient is amounting to IDR 174,770.00. On research, this is the average cost no direct reach IDR 596,884.00 because the location of house patient and companion distant patient from Prof. Dr. Margono Soekarjo Hospital that need enough money for transportation lots of food canteen which tends to be expensive with an average of IDR 15,000.00 for one meal and costs lost productivity big consequence day take care stay tall whereas cost no direct the lowest is only IDR 168,000.00. Cost low indirect respondents because patients work as housewives so they don't lose productivity costs.

This thing the opposite study of Dewi (2015) who stated that housewives experience more cost big consequences of the need cost for replacement housewives to look after the home and



children compared with patients who have a job. This study is different from Dewi's research (2015) showing the opposite because the researcher experiences limitations in dig information about costs no directly borne by the mother House ladder so that no could is known big loss the economy experienced by housewives as well as researcher no-dig condition psychological respondent after possible mastectomy will cause loss economy.

Operations performed will leave used a large wound in the chest, numbness, difficulty in activity every day, and feelings of no comfortable after the operation. That thing related to research conducted by Sudarto (2002) which states that sufferers many sigh pain because of cut-off branch nerve *intercostobrachial* moment surgery, healing fibrosis wounds, and complications radiation so that patient will experience loss economy consequence the disturbance function part body.

Based on results calculation cost direct and cost no direct then get results *cost of illness* (burden cost sick) patient cancer breast with action mastectomy with a total of IDR 311,133,434.00 with an average of IDR 10,371,114.00. The lowest *cost of illness for* respondents is as big as IDR 5,023,500.00 whereas the highest respondent's *cost of illness* as big as IDR 18,772,800.00. Analysis of the cost of this *illness* shows that if a patient suffering from cancer breasts and handled with mastectomy will experience burden cost on house sick, patients and companions patient amounting to IDR 10,371,114.00. According to Purbasari *et al* (2015) load cost sick of disease chronic tend bigger in comparison burden cost of disease on other from aspect patients and family patients.

According to Abegunde and Stanciole (2006), if reviewed from the perspective of individual or House stairs, incident disease chronic by direct will lower total force work caused height number death, absence employment disability, and retirement early. That thing could cause impact others, including number dependency the more high, productivity decrease, an increase in consumption of goods and services field health as well as a reduction in the ability to save and invest.

Impacts that arise if reviewed from the perspective of the country that is drop number per capita income and figures hope life that can cause number growth economy and welfare low as well as happening poverty so that in term long time will hinder investment foreigners in the country (Istiqomah and Rokhmah, 2016). In patients with cancer breast with action mastectomy, loss the economy experienced not only limited lost income but also experienced loss big economy and not could count value after the patient lost the element of her femininity as network breasts. Patient *post-operation* rapture breast will lost image herself as a woman so that will cause impact economical consequence shock psychological value no could pay off such a shame, no believe self and not valued as a female.

Because that needed innovation new to the house sick for handle case cancer breast with use technology latest that can treat patient with maximum without rapture whole network breast with affordable cost as well as improvement of preventive programs for case cancer breasts. Patients also need therapy physical and therapy psychological after undergoing action surgery/mastectomy. Therapy physique required for curating complaint sick consequence operation and return function body so as not bother activity whereas therapy psychological after



operate operation will return patient for life productive so that no cause drop income from aspect patient, family, regional and national. Patients given therapy will Upgrade their truest self, spirit life, and ability self-return for operate activity daily activities economy.

CONCLUSION

The total cost of illness is IDR 311,133,434.00 with an average of IDR 10,371,114.00. The lowest cost of illness for respondents is IDR 5,023,500.00 while the highest respondent's cost of illness amounts to IDR 18,772,800.00. Cost of illness obtained from direct costs and indirect costs. The average direct cost is IDR 9,774,270.00 and the average indirect cost is IDR 596,884,078.00.

REFERENCES

- Anggorowati, L. (2013). Faktor Risiko Kanker Payudara Wanita. *Jurnal Kesehatan Masyarakat*, 8, 121-126.
- Dewi, D. (2015). Peran Ibu Rumah Tangga dalam Perekonomian Keluarga Studi Kasus di Desa Gunem Kabupaten Rembang. *Buletin Bisnis dan Manajemen*, 1, 38-45.
- Dewi, F. I. R., Djoenaina, V., dan Melisa. (2004). Hubungan Antara Resiliensi dengan Depresi pada Perempuan Pasca Pengangkatan Payudara (Mastektomi). *Jurnal Psikologi*, 2, 101-120.
- Guntari dan Suariyani. (2016). Gambaran Fisik dan Psikologis Penderita Kanker Payudara Post Mastektomi di RSUP Sanglah Denpasar Tahun 2014. *Arc Com Health*, 3, 24-35.
- Harahap, A. (2017). Pembedahan pada Tumor Ganas Payudara. *Majalah Kedokteran Andalas*, 38, 54-62.
- Istiqomah dan Rokhmah. (2016). Beban Ekonomi Pada Penderita Hipertensi Dengan Status PBI Jkn Di Kabupaten Pamekasan. *Jurnal Manajemen Kesehatan*, 2, 124-132.
- Misnaniarti. (2015). Analisis Situasi Penduduk Lanjut Usia dan Upaya Peningkatan Kesejahteraan Sosial di Indonesia. *Jurnal Ilmu Kesehatan Masyarakat*, 8, 67-73.
- Nurdianto, E. (2013). Analisis Biaya pada Pasien Kanker Payudara di Instalansi Rawat Inap RSUD Prof. Dr. Margono Soekarjo Purwokerto Tahun 2012. *Tesis*, Fakultas Farmasi Universitas Muhammadiyah Purwokerto.



Peraturan Menteri Kesehatan Nomor 59 Tahun 2014 tentang Standar Tarif JKN.

Purbaningsih, Wahyono dan Suparniati. (2015). Cost of Illness Pasien Stroke. *Jurnal Manajemen dan Pelayanan Farmasi*, 5, 95-100.

Safitri, M., dan Kun K. (2013). Analisa Deskriptif Lama Perawatan (LOS) Pasien RI Jamkesmas pada Kasus Penyakit Kanker Payudara (Ca Mammae) dengan Tindakan Mastektomi yang Dirawat di RSI Sultan Agung Semarang Tahun 2012. *Artikel Ilmiah*, Fakultas Kesehatan Universitas Dian Nuswantoro Semarang.

Sudarto, E. (2002). Korelasi Pemberian Terapi Tambahan pada Kompilasi Fisik dan Kualitas Hidup pada Penderita Karsinoma Payudara Stadium II Post Mastektomi. *Skripsi*, Fakultas kedokteran Universitas Diponogoro.

Sudra, R.I. (2010). *Statistik Rumah Sakit*. Graha Ilmu, Yogyakarta.



International Journal of Health, Education and Social (IJHES)