

HEALTH-RELATED QUALITY OF LIFE IN POSTMENOPAUSAL WOMEN WITH ADVANCED BREAST CANCER RECEIVING ADJUVANT HORMONE THERAPY (RIBOCICLIB AND LETROZOLE)

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ABSTRACT

Breast cancer is a type of cancer that affects many women in Indonesia. Adjuvant hormone therapies, such as letrozole and ribociclib, have succeeded in improving the patient's quality of life. This study aimed to assess the quality of life of postmenopausal women with advanced breast cancer who received adjuvant hormone therapy with ribociclib and letrozole. A cross-sectional study was conducted using retrospective data from postmenopausal female breast cancer patients at Dharmais Cancer Hospital between 2020 and 2023 who met the inclusion criteria. To determine the impact of sociodemographics on patient quality of life, data were examined using the quality of life score (EQ5D5L) and Spearman test. There were 29 patients, with a mean age of 54.9 years (SD = 8.65); the highest education level was high school (34.5%); The majority of occupations are housewives (69%), and the majority are stage IV (34.5%). The mean utility and VAS values of Ribociclib were 0.885 and 81.66, respectively, whereas those for letrozole were 0.725 and 78.46, respectively. Analysis of the relationship between quality of life and patient characteristics showed that the quality of life of patients with breast cancer treated with adjuvant ribociclib and letrozole therapy was influenced by the stage of breast cancer ($p = 0.008$). These findings indicate that patients receiving ribociclib and letrozole therapy have a good quality of life, which quality of life quality of life is influenced by the stage of malignancy.

Keywords: breast cancer, quality of life, letrozole, ribociclib, post menopause

INTRODUCTION

Breast cancer is the main cause of death from cancer in Indonesia, with a mortality rate of 17.1 per 100,000 people. Most breast cancer patients in Indonesia are diagnosed at > 55 years of age (Belete et al., 2022; Moradinazar et al., 2019). However, approximately 19.22% and 0.79% of cancer cases occur in patients aged 45 and 18 years, respectively (Solikhah et al., 2022). The WHO reports that between the 1980s and 2020, age-standardized breast cancer mortality decreased by 40% in high-income nations, making breast cancer survivors the most common type of cancer survivors (Belete et al., 2022).

The availability of increasingly potent treatments has helped increase breast cancer survival rates. One of the mainstay treatments for breast cancer patients with positive hormone receptors is adjuvant hormone therapy using ribociclib, aromatase inhibitors (letrozole, anastrozole, and exemestane), or selective estrogen receptor modulators (tamoxifen) (Andreu et al., 2022). Ribociclib can inhibit the growth of Cyclin-dependent Kinase-4 or Cyclin-dependent Kinase-6 proteins, which cause breast cancer. Meanwhile, aromatase inhibitors (letrozole, anastrozole, or exemestane) work to stop the hormone

estrogen in patients with breast cancer; therefore, the combination of the two drugs is very good (Sisay & Edessa, 2017). Other studies have reported that aromatase inhibitors such as letrozole, anastrozole, and exemestane can suppress the production of estrogen, thereby inhibiting the development of breast cancer (Andreu et al., 2022).

Postmenopausal patients who use hormone therapy for an extended period, such as anastrozole, letrozole, exemestane (aromatase inhibitor), or a combination of ribociclib and letrozole, may experience side effects and psychological stress, lowering their quality of life (Marschner et al., 2019). As a result, the primary goal of breast cancer therapy is tumor elimination, prevention of metastatic recurrence, and preservation of quality of life (Andreu et al., 2022; Criscitiello et al., 2021). Nowadays, in addition to looking at the psychological, physical, social, and spiritual effects of breast cancer, quality of life has become an essential outcome measure in clinical investigations and survival studies (Mokhatri-Hesari & Montazeri, 2020). To enhance patient health outcomes and assess treatment management, patient quality-of-life measurements are required (Koboto et al., 2020).

Quality of life is an individual's response to aspects of his life, namely physical, mental, activity, and sociocultural. In this study, EuroQol-5 Dimensions (EQ-5D-5L) was used to measure the quality of life of breast cancer patients. EQ-5D-5L is the most widely known and commonly used generic instrument to measure the health status and quality of life of breast cancer patients (Devlin & Krabbe, 2013). This study aimed to determine the quality of life of postmenopausal women with advanced breast cancer who received adjuvant hormone therapy (ribociclib or letrozole) at a hospital in Jakarta, Indonesia, using the EQ-5D-5L questionnaire.

RESEARCH METHODS

This cross-sectional study was conducted through an interview using a standardized and validated assessment tool (EQ-5D-5L) in postmenopausal women with ER+ breast cancer who were administered ribociclib and letrozole at a national referral hospital in Indonesia. Subjects were included in the study if they met the following inclusion criteria: postmenopausal women with ER+ breast cancer, aged 50–65 years, had undergone surgery, had received systemic therapy in the form of chemotherapy and adjuvant hormone therapy (ribociclib and letrozole) from 2020 to 2023, and were willing to participate in this research.

Equipment and Materials

Data collection

The data collected included: 1) data from patient medical records to obtain research samples (postmenopausal women with advanced breast cancer who met the inclusion and exclusion criteria) and information about the clinical characteristics of the sample by collecting clinical data including age, education, medical intervention, and health status; 2) data from patient questionnaires to measure the quality of life of postmenopausal women with advanced breast cancer. Quality of life was objectively assessed using the Indonesian version of the EQ-5D-5L instrument obtained from the Euroqol Group. This instrument measures five aspects: mobility, self-care, daily activities, pain and discomfort, and anxiety. The distribution of the EQ-5D-5L instrument was carried out by the researcher himself to the patient to ensure that the process of filling out the EQ-5D-5L instrument was carried out in accordance with the guidelines because it was accompanied directly by the researcher when the patient went to the hospital for control or during the patient's home visit. The utility value (EQ-5D index score) was calculated using a set of Indonesian values. A descriptive analysis was carried out to present health quality related to patient health status, VAS, and utility scores (Grup Qol Euro, 2021; Purba et al., 2017).

Ethics approval

All procedures were performed in accordance with the Declaration of Helsinki, and the institutional review board at each study site approved the final protocol. The research protocol was approved by the Research Ethics Committee of Dharmais Cancer Hospital, Jakarta, Indonesia (No. 169/KEPK/V/2023). The Research Ethics Committee did not require patient consent because this study used retrospective patient records and financial data, and no personal information was collected. All the data were stored anonymously to ensure confidentiality.

Outcome measures of health-related quality of life

The EQ-5D-5L consists of the EQ-5D-5L descriptive system and the EQ Visual Analogue Scale (EQ VAS). The descriptive system comprises five dimensions (mobility, self-care, usual activities, pain or discomfort, anxiety, or depression). Each dimension had five levels: no problems, slight problems, moderate problems, severe problems, and extreme problems. The respondent was asked to indicate his or her health state by ticking (or placing a cross) in the box against the most appropriate statement in each of the 5 dimensions. This decision resulted in a 1-digit number expressing the level selected for that dimension. The digits for 5 dimensions can be combined into a 5-digit number describing the respondent's health state. Each state is referred to in terms of a 5-digit code. For example, state 11111 indicates no problems on any of the 5 dimensions, while state 12345 indicates no problems with mobility, slight problems with washing or dressing, moderate problems with doing usual activities, severe pain or discomfort, and extreme anxiety or depression ([Purba et al., 2017](#); [Setyowibowo et al., 2018](#)).

The EQ-5D-5L asks respondents to simply mark an X on the scale to indicate how their health is TODAY' and then to 'write the number you marked on the scale in the box below'. VAS scores are determined using values that have been assigned to the Indonesian population with a range of 0 to 100, where a score of 0 is the worst health condition and 100 is the best health condition ([Purba et al., 2017](#)). The health status of postmenopausal women with ER+ breast cancer obtained through the EQ-5D-5L instrument was used to calculate the QALYs of patients who were administered ribociclib or letrozole.

Research Procedure

This study included the following stages:

1. Ethical clearance

The first stage is to apply permission from the ethics committee of Dharmais Cancer Hospital. The committee obtained permission for research ethics from the Director of the Jakarta Dharmais Cancer Hospital.

2. Data collection.

Data on patient characteristics were obtained from the Hospital Information System (SIRS) of Dharmasi Cancer Hospital Jakarta. Collect data on the quality of life of patients with ER+ breast cancer, which is primary data obtained from observational studies based on the results of the EQ-5D-5L questionnaire

3. Data analysis

Analysis Descriptive analysis to see the characteristics of breast cancer patients, utility analysis of the results of the EQ-5D-5L questionnaire to see differences in the quality of life of ribociclib and letrozole, Spearman test to see the correlation between patient characteristics and utility values

Data Analysis

Data analysis was performed using the IBM Statistical Package for Social Sciences (SPSS) version. Descriptive statistics were performed to obtain an overview of the characteristics of postmenopausal women with ER+ breast cancer. EQ-5D-5L data obtained from subjects were described by calculating the percentage of problem level in each quality

of life dimension in postmenopausal female patients with ER+ breast cancer who were administered ribociclib or letrozole. The EQ-5D-5L utility index and EQ-VAS score by degree of disability in patients receiving adjuvant therapy are shown as mean, 95% confidence interval, standard deviation (SD), and categorical variables expressed as frequencies and percentages. Differences in the average health utility index for each characteristic of patients administered ribociclib or letrozole were analyzed using univariate analysis of variance. The significance level was determined using p-values.

RESULTS AND DISCUSSION

The research sample was carried out by identifying ER+ breast cancer patients who were administered the drugs letrozole or ribociclib in the years 2020–2023 through pharmacy installations and collecting data from the Hospital Management Information System. Adjustments were made to the inclusion and exclusion criteria to obtain a sample size of 66 patients. At the time the research was underway, there were patients who were not willing to be respondents, had died, and could not be contacted; therefore, a final sample of 29 patients was obtained.

Respondent Characteristics

Table I presents the respondents' attributes. The age aspect was shown to be the most prevalent in ER+ postmenopausal female breast cancer patients with RSKD at the age of 50–59 years, with a proportion of 37.9%, followed by those aged 40 – 49 years and those aged more than 60 years each at 31.0%. According to education, patients with a high school diploma had the highest number, 10 (34.5%), followed by elementary school and junior high school with 20.7% each, first degree with 13.8%, and no school, second diploma, and second degree with 3.4% each. In terms of work, the largest number of patients with housewives' work status was reported to be 20 (69%), followed by employees (13.8%), the self-employed (6.9%), retired, nurses, and government employees, each at 3.4%. Based on the type of diagnosis, it is known that C50.8 has the largest number of patients, namely 20 (69%). Stage IV has a total of 10 patients (34.5%), according to the type of stage. The most common histological category was invasive lobular carcinoma (ILC), which accounted for 4 (13.8%) of the patients. In terms of age, the majority of ER+ postmenopausal female breast cancer patients with RSKD were between the ages of 50 and 59. This is consistent with the statement in Breast Cancer Facts & Figures 2019-2020, which states that women who reach menopause at the age of 55 years or older have a 12% increased risk. This higher risk could be attributed to prolonged exposure to reproductive hormones ([American Cancer Society, 2019](#)). The highest number of patients with a high school diploma was observed. This was also discovered in a study on the association between education and breast cancer, with 40 patients having a high school diploma. A person with a high degree of education will be more sensitive to health information as well as more aware of the symptoms of breast cancer, allowing them to conduct early tests and cancer treatment ([Rara Sulviana & Kurniasari, 2021](#)). In terms of employment, the patient was known to be a housewife. According to research ([Mehejabin & Rahman, 2022](#)), up to 76.2% of women are housewives. The high rate in this position is attributable to a lack of understanding of the breast cancer risk factors. Based on the stage, stage IV is known to have a total of 10 patients (34.5%). This is also found in research ([Wangsa et al., 2018](#)): late stages have a proportion of 45–55%; this high rate is due to awareness about breast health and a lack of early detection programs.

EQ-5D-5L Domain by Level

The number of responses for each part of the EQ5D5L dimension is listed in **Table II**. The distribution of answers without problems had a larger portion in all EQ5D5L dimensions: MO (72.4%), SC (72.4%), UA (55.2%), AD (55.2%), and PD (37.9%). This is in accordance with research that shows answers without problems with the highest percentage in the MO domain, at 66.8% and (SC), 83.4% ([Wadasadawala et al., 2023](#)). The

proportion of patients who reported experiencing mild problems was in the PD (31%), AD (24.1%), UA (20.7%), MO (17.2%), and SC (10.3%) dimensions. The proportions of patients who reported experiencing problems at a moderate level were AD (13.8%), PD (10.3%), UA (6.9%), and MO (3.4%). The patients who reported experiencing severe problems were PD (17.2%), UA (10.3%), SC (6.9%), MO, and AD (3.4% each). One study found that 81 people (47.6%) struggled with anxiety or depression ([Abu Farha et al., 2017](#)), while another found that 58% of people reported mild to moderate anxiety or despair ([Wallwiener et al., 2016](#)). The proportion of patients who reported experiencing problems at a very severe level were SC (10.3% for), UA (6.9% for), and 3.4% for MO, PD, and AD, respectively. This is partly due to hair loss and the adverse effects of medication ([Wallwiener et al., 2016](#)). For patients with breast cancer, the most affected quality of life domains are pain and insomnia ([Yusoff et al., 2022](#)).

EQ-5D-5L Domain Based on Letrozole and Ribociclib

The results of the comparison of the responses of the EQ-5D-5L domain based on adjuvant hormone therapy (letrozole and ribociclib) are shown in **Table III**. The results showed that, of the 5 domains, the dominant percentage was level 1 for patients who were administered letrozole or ribociclib. A total of 18 patients had no problems walking (MO) or self-care (SC) for patients who were administered letrozole. There were 3 patients not have problems walking (MO) or self-care (SC) for patients who were given ribociclib.

Health State of Respondents

The health status of postmenopausal female breast cancer patients showed that patients administered letrozole had 17 health states with a utility value range of 0.591–1.000, and patients administered ribociclib had 3 health states with a utility value range of 0.824–1.000. A utility value of 1.000 or a health status of 11111 indicates that the patient has a very good health condition in the five domains. There were 7 patients with a health status of 11111 (26.9 %) who were administered letrozole, and there was 1 patient with a health status of 11111 (33.3 %) who were given ribociclib. The value of the state of health shows a utility value in accordance with the improvement in the patient's condition. These results are in accordance with those of previous studies ([Borstnar et al., 2022](#)), which state that the use of these two drugs (letrozole and ribociclib) is safe and efficacious in clinical trials as well as results that can maintain their quality of life.

Utility and VAS Values of Patients with Breast Cancer with Letrozole or Ribociclib Therapy

Table IV shows the utility and VAS values of postmenopausal women with ER+ breast cancer who were given letrozole or ribociclib, with the results that patients given ribociclib had a utility value of 0.885 and a VAS value of 81.66. Meanwhile, patients who were administered letrozole had a utility value of 0.725 and VAS value of 78.46. These results indicate that postmenopausal women with ER+ breast cancer who were administered ribociclib had better utility and VAS values than those administered letrozole. The results of this study are also in line with the MONALEESA-2 study, which showed that patients who received ribociclib plus letrozole lived longer without exacerbating cancer (development-free survival) than patients treated with letrozole alone ([Howard-Anderson et al., 2012](#)).

Utility and VAS Values Based on Characteristics

Table V shows the utility and VAS values of postmenopausal women with ER+ breast cancer based on patient characteristics. These results showed that the best utility and VAS values for each characteristic aspect (age, education, work, and stage) were determined by the average obtained.

The EQ-5D-5L utility score in the age category showed that patients aged >60 years had an average utility score of 0.773 (SD = 0.279), which was higher than those aged 40–49 years (0.511) and 50–59 years (0.676). The VAS score in the age category showed that those aged 50–59 years had a VAS score of 85.0 (SD = 13.0), which is higher than those aged 40–49 years (69.4) and those aged > 60 years (80.5). According to a different study, patients between the ages of 50 and 59 years had a greater utility value (0.91) and VAS value (89.35) than patients between the ages of 30, 39, 60–69, and > 70 years (Yusoff et al., 2022). Patients with a bachelor's degree had the highest average utility score of 0.901 (SD = 0.115). Patients with breast cancer who had completed elementary and middle school had worse quality of life outcomes than those who had completed higher education ($p = 0.012$) (Mursyid et al., 2019). Patients with unclear clinical stage had the highest average utility score of 0.866 (SD = 0.165) and an average VAS score of 86.40 (SD = 12.4). Different studies have shown that patients with stage 1 breast cancer have a better utility value (0.72) than patients with advanced-stage breast cancer, who have a utility value of 0.67 (Abu Farha et al., 2017).

The Influence of Characteristics on Quality of Life

The results of the Spearman's rank correlation test to determine the influence of characteristics on the quality of life of postmenopausal women with ER+ breast cancer are shown in **Table VI**. Regarding age, the correlation value was 0.191 (sig. $p = 0.322$), meaning that there was no significant relationship between age and utility score. This is consistent with research demonstrating that quality of life and age are not significantly correlated ($p = 0.826$) (Yusoff et al., 2022). The education aspect has a correlation value of -0.042 (sig. $p = 0.830$), meaning that there is no significant relationship between education and utility scores in breast cancer sufferers. The correlation between clinical stage and utility score had a correlation value of -0.480 (sig. $p = 0.008$), indicating that there is a significant relationship between clinical stage and utility score for breast cancer patients. This is in line with research showing a significant relationship between clinical stage and utility score, which produced a correlation value of 0.479 (sig. $p = 0.001$) (Sinaga et al., 2018). This is caused by various factors such as stress and depression. The more severe the stage, the more severe the symptoms of depression, which can affect quality of life. The limitation of this study is that the number of patients using ribociclib is still very small, so a wider study is needed to cover more hospitals to produce more accurate data.

Table I. Characteristics of Breast Cancer Patients

| Patient Characteristics | N=29 | Percentage (%) |
|-------------------------|------|----------------|
| Age | | |
| 40-49 | 9 | 31,0 |
| 50-59 | 11 | 37,9 |
| >60 | 9 | 31,0 |
| Education | | |
| No school | 1 | 3,4 |
| Elementary school | 6 | 20,7 |
| Junior high school | 6 | 20,7 |
| Senior high school | 10 | 34,5 |
| Second diploma | 1 | 3,4 |
| First degree | 4 | 13,8 |
| Second degree bachelor | 1 | 3,4 |
| Work | | |
| Housewife | 20 | 69,0 |
| Employee | 4 | 13,8 |
| Retired | 1 | 3,4 |

| Patient Characteristics | N=29 | Percentage (%) |
|-------------------------|------|----------------|
| Nurse | 1 | 3,4 |
| Government employees | 1 | 3,4 |
| Self-employed | 2 | 6,9 |
| Stadium | | |
| I | 0 | 0 |
| II | 0 | 0 |
| III | 2 | 6,9 |
| V | 10 | 34,5 |
| Not known | 17 | 58,6 |

Table II. EQ-5D-5L Domain Responses Based on Domain Level

| Domain | Level 1 | | Level 2 | | Level 3 | | Level 4 | | Level 5 | | Total | |
|--------|---------|------|---------|------|---------|------|---------|------|---------|------|-------|-----|
| | 1(n) | % | 2(n) | % | 3(n) | % | 4(n) | % | 5(n) | % | (n) | % |
| MO | 21 | 72,4 | 5 | 17,2 | 1 | 3,4 | 1 | 3,4 | 1 | 3,4 | 29 | 100 |
| SC | 21 | 72,4 | 3 | 10,3 | 0 | 0 | 2 | 6,9 | 3 | 10,3 | 29 | 100 |
| UA | 16 | 55,2 | 6 | 20,7 | 2 | 6,9 | 3 | 10,3 | 2 | 6,9 | 29 | 100 |
| PD | 11 | 37,9 | 9 | 31 | 3 | 10,3 | 5 | 17,2 | 1 | 3,4 | 29 | 100 |
| AD | 16 | 55,2 | 7 | 24,1 | 4 | 13,8 | 1 | 3,4 | 1 | 3,4 | 29 | 100 |

MO Mobility, SC Self-care, UA Activities that can be performed, PD Pain/discomfort, AD Anxiety or depression.

Table III. EQ-5D-5L Domain Responses Based on Letrozole and Ribociclib

| Letrozole | | | | | | | | | | | | |
|------------|---------|------|---------|------|---------|------|---------|------|---------|------|-------|-----|
| Domain | Level 1 | | Level 2 | | Level 3 | | Level 4 | | Level 5 | | Total | |
| | 1(n) | % | 2(n) | % | 3(n) | % | 4(n) | % | 5(n) | % | (n) | % |
| MO | 18 | 69,2 | 5 | 19,2 | 1 | 3,8 | 1 | 3,8 | 1 | 3,8 | 26 | 100 |
| SC | 18 | 69,2 | 3 | 11,5 | 0 | 0 | 2 | 7,7 | 3 | 12,5 | 26 | 100 |
| UA | 15 | 57,7 | 4 | 15,4 | 2 | 7,7 | 3 | 11,5 | 2 | 7,7 | 26 | 100 |
| PD | 9 | 34,6 | 8 | 30,8 | 3 | 11,5 | 5 | 19,5 | 1 | 3,8 | 26 | 100 |
| AD | 14 | 53,8 | 6 | 23,1 | 4 | 15,4 | 1 | 3,8 | 1 | 3,8 | 26 | 100 |
| Ribociclib | | | | | | | | | | | | |
| Domain | Level 1 | | Level 2 | | Level 3 | | Level 4 | | Level 5 | | Total | |
| | 1(n) | % | 2(n) | % | 3(n) | % | 4(n) | % | 5(n) | % | (n) | % |
| MO | 3 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 100 |
| SC | 3 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 100 |
| UA | 1 | 33,3 | 2 | 66,7 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 100 |
| PD | 2 | 66,7 | 1 | 33,3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 100 |
| AD | 2 | 66,7 | 1 | 33,3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 | 100 |

MO Mobility, SC Self-care, UA Activities that can be performed, PD Pain/discomfort, AD Anxiety or depression.

Table IV. Utility and VAS Values of Patients with Letrozole and Ribociclib Therapy.

| Therapy regimen | Utility | | | VAS | | |
|-----------------|---------|-------|-----------------|-------|-------|--------------|
| | Mean | SD | IK95% | Mean | SD | IK95% |
| LET | 0,725 | 0,292 | 0,607.6-0,843.9 | 78,46 | 19.68 | 70.51-86.41 |
| RIB | 0,885 | 0,099 | 0,637.4-1132.5 | 81.66 | 10.40 | 55.81-107.52 |

LET: Letrozole, RIB: Ribociclib.

Table V. Utility and VAS Values of Patients with Letrozole and Ribociclib Therapy

| Characteristics | | Utility | | VAS | |
|------------------|----------------------|---------|-------|-------|------|
| | | Mean | SD | Mean | SD |
| Age | | | | | |
| | 40-49 | 0,511 | 0,520 | 69,4 | 24,4 |
| | 50-59 | 0,676 | 0,514 | 85,0 | 13,0 |
| | >60 | 0,773 | 0,279 | 80,5 | 16,6 |
| Education | | | | | |
| | No school | 0,831 | - | 85,0 | - |
| | Elementary school | 0,766 | 0,446 | 88,3 | 11,2 |
| | Junior high school | 0,472 | 0,639 | 70,8 | 22,8 |
| | Senior High School | 0,553 | 0,459 | 75,0 | 23,2 |
| | DII | 1,000 | - | 100,0 | - |
| | S1 | 0,901 | 0,115 | 80,0 | 09,1 |
| | S2 | 0,604 | - | 75,0 | - |
| Work | | | | | |
| | Housewife | 0,598 | 0,505 | 78,2 | 21,4 |
| | employee | 0,881 | 0,188 | 82,5 | 06,4 |
| | retired | 0,169 | - | 55,0 | - |
| | nurse | 0,514 | - | 80,0 | - |
| | government employees | 0,824 | - | 70,0 | - |
| | self-employed | 1,000 | 0,000 | 92,5 | 03,5 |
| Stadium | | | | | |
| | I | - | - | - | - |
| | II | - | - | - | - |
| | III | -0,366 | 0,318 | 67,5 | 10,6 |
| | IV | 0,499 | 0,485 | 68,0 | 23,3 |
| | Not known | 0,866 | 0,165 | 86,4 | 12,4 |

Table VI. Influence of Characteristics on Quality of Life

| | | Age | Work | Education | Stadium |
|------------------------|----------------|------|------|-----------|---------|
| Quality of Life | Correlation | | | | |
| | Coefficient | .191 | .171 | -.042 | -.480 |
| | Sig (2-tailed) | .322 | .376 | .830 | .008 |
| N | | 29 | 29 | 29 | 29 |

*signifikansi (p <0.05)

CONCLUSION

Postmenopausal women with ER+ breast cancer who were administered ribociclib had a better quality of life than those who were administered letrozole. The use of ribociclib is recommended for breast cancer patients who have a greater ability to pay for ribociclib because ribociclib is not included in the national formulary drug list.

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