ABSTRAK

Latar belakang. Kanker payudara merupakan penyakit tersering pada perempuan dengan subtipe terbanyak adalah estrogen reseptor positif (ER+) dan populasi terbesar pada pascamenopause. Standar terapi hormonal usia pascamenopause adalah aromatase inhibitor dengan jenis dan kesetaraan efikasi yang belum diketahui. Modalitas terapi kanker payudara berbiaya tinggi mendorong penelitian pemilihan terapi yang *cost-effective* dengan mempertimbangkan luaran klinis dan humanistik pada pasien. Penelitian ini bertujuan menganalisis besarnya *cost of illness* (COI) perawatan pasien kanker payudara *subtype* ER+ dan *human epidermal growth factor receptor negative* (ER+/HER2-) pascamenopause, menganalisis nilai *incremental cost effectiveness ratio* (ICER) per *effectiveness* dan nilai ICER per *quality adjusted life years* (QALYs) pada terapi hormon anastrozol, letrozol dan eksemestan.

Metode. Desain penelitian menggunakan observational analitik dengan rancangan *cross sectional* dan kohort. Metode COI digunakan untuk menganalisis biaya langsung medis, biaya langsung non medis dan biaya tidak langsung. *Cost effectiveness analysis* (CEA) dilakukan dengan pengamatan rekam medis dan biaya medis langsung menghasilkan luaran *disease-free survival* (DFS) dan efektifitas biaya. *Cost utility analysis* (CUA) digunakan untuk menganalisis obat yang bersifat *value for money* melalui pengembangan Model Markov, mendapatkan luaran biaya dan QALY selama *time horizon* 20 tahun. Variabel utilitas diperoleh dari wawancara menggunakan kuesioner EQ-5D-5L, variabel biaya didapat dari metode COI dan variabel risiko relatif, probabilitas serta *discount rate* diambil dari studi literatur.

Hasil. Hasil penelitian pada 79 pasien dengan komposisi anastrozol 31, letrozol 22 dan eksemestan 26, diperoleh rata-rata umur pasien 62,7 ± 6,2 tahun dengan stadium paling banyak adalah stadium III (63,29%). Efektifitas obat diperoleh dengan rata-rata DFS untuk anastrozol, letrozol dan eksemestan adalah 49,8, 58,25 dan 53,12 bulan dengan biaya langsung medis sebesar Rp136.928.725, Rp141.899.304 dan Rp164.791.336. Biaya langsung nonmedis pasien per kunjungan sebesar Rp155.806 untuk makan dan minum, Rp279.030 untuk transportasi dan Rp1.341.012 untuk terapi pendukung. Produktifitas pasien yang hilang sebesar Rp399.051 untuk fase nonmetastasis dan Rp422.143 untuk fase metastasis. Nilai ICER per *effectiveness* letrozol *versus* anastrozol lebih rendah daripada eksemestan *versus* anastrozol yaitu Rp7.058.810 dan Rp100.708.233 per tahun. Wawancara 126 pasien diperoleh rata-rata umur 59,2 ± 6,1 tahun dengan pekerjaan paling banyak adalah ibu rumah tangga (53,2%). Didapat rata-rata skor utilitas pasien pada health state *free metastasis*, *locoregional metastasis* dan *distant metastasis* yaitu 0,871± 0,10, 0,768 ± 0,19 dan 0,584 ± 0,44. Hasil ICER per QALYs letrozol *versus* anastrozol adalah Rp4.567.903 untuk perspektif *provider* dan Rp22.354.541 untuk perspektif *societal* sedangkan ICER per QALYs eksemestan *versus* anastrozol adalah Rp42.702.881 untuk perspektif *provider* dan Rp57.450.415 untuk perspektif *societal*. Semua nilai ICER per QALYs dibawah *threshold* Rp177.300.000.

Kesimpulan. Dibandingkan terhadap anastrozol, letrozol lebih *cost-effective* daripada eksemestan.

Keywords: farmakoekonomi, kanker payudara, kualitas hidup, aromatase inhibitor, pascamenopause

ABSTRACT

Background. Breast cancer is the most common disease in women while the most common subtype was estrogen receptor positive (ER+) and the most population was postmenopausal women. Hormonal therapy for postmenopausal age was aromatase inhibitor. There are different types of aromatase inhibitors, with unknown equivalence of efficacy. High-cost of breast cancer treatment modalities encourage study to choose cost-effective therapies by considering clinical and humanistic outcomes in patients. This study aimed to analyze the value of the cost of care of breast cancer therapy in postmenopausal women with ER+ HER2-, to analyze the value of incremental cost-effectiveness ratio (ICER) per effectiveness and ICER per quality-adjusted life years (QALYs) on anastrozole, letrozole and exemestane.

Material and methods. The study design was observational analytic with a cross-sectional and cohort. Cost of Illness (COI) method was used to analyze direct medical costs, direct nonmedical costs and indirect costs. Cost-effectiveness analysis (CEA) was carried out using observation techniques on medical records and patient examination costs and the outcome was disease-free survival (DFS) and cost-effectiveness. Cost utility analysis (CUA) was conducted to analyze the most cost-effective drug through the Markov Model to obtain cost and QALY outcomes over a 20-year time horizon. The utility was obtained through interviews using the EQ-5D-5L questionnaire, the cost variable was obtained from the COI and the relative risk, probability and discount rate variables were taken from the literature study.

Results. The study results on 79 patients by anastrozole 31, letrozole 22 and exemestane 26, obtained the average age of the patients was 62.7 ± 6.2 years with the most stage being stage III (63.29%). The effectiveness of the drug obtained by the average DFS for anastrozole, letrozole and exemestane was 49.8, 58.25 and 53.12 months with direct medical costs of IDR136,928,725, IDR141,899,304 and IDR164,791,336. The direct nonmedical cost was IDR155,806 for meal costs, IDR279,030 for transportation costs and IDR1,341,012 for supporting therapy costs. The ICER value per effectiveness of letrozole versus anastrozole is lower than that of exemestane versus anastrozole, namely IDR7,058,810 and IDR100,708,233 per year. Interviews with 126 patients obtained an average age of 59.2 ± 6.1 years with the most occupation being housewives (53.2%). The average utility scores of patients on health state free metastases (FM), locoregional metastases (LM) and distant metastases (DM) were 0.871 ± 0.10, 0.768 ± 0.19 and 0.584 ± 0.44. ICER results per QALYs of letrozole versus anastrozole were IDR4,567,903 for the provider perspective and IDR22,354,541 for the societal perspective while the ICER per QALYs for exemestane versus anastrozole was IDR42,702,881 for the provider perspective and IDR57,450,415 for the societal perspective. All ICER values per QALYs are below the threshold of IDR177,300,000.

Conclusions. Compared to anastrozole, letrozole is more cost-effective than exemestane.

Keywords: pharmacoeconomic analysis, aromatase inhibitor, breast cancer, postmenopausal, non-metastatic