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Cost Effectiveness Analysis Letrozole dibanding Tamoksifen sebagai Terapi Adjuvan pada Pasien Kanker
Payudara ER/PR + HER 2 - Pascamenopause
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INTISARI

Terapi hormonal berupa letrozole dan tamoksifen memerlukan penelitian lebih lanjut untuk membantu proses pemilihan terapi yang lebih efektif, efikasi dan ekonomis. Studi di beberapa negara menunjukkan letrozole memiliki efektivitas yang lebih unggul dibandingkan tamoksifen. Disisi lain, biaya terapi hormonal dengan letrozole lebih tinggi. Oleh karena itu, penelitian ini bertujuan untuk menganalisis biaya medis langsung, efektivitas terapi berdasarkan *disease-free survival* (DFS), serta nilai *incremental costeffectiveness ratio* (ICER) antara letrozole dan tamoksifen.

Studi ini menggunakan observasional analitik dengan desain kohort retrospektif. Subyek pada penelitian ini adalah pasien kanker payudara dengan ER/PR +, HER 2 – pascamenopause. Dalam penelitian farmakoekonomi ini, outcome klinis diukur menggunakan disease-free survival (DFS) sebagai parameter efektivitas terapi. Sementara itu, komponen biaya diukur sebagai biaya medis langsung (*direct medical cost)* berdasarkan perspektif rumah sakit. Kedua parameter ini kemudian diintegrasikan dalam analisis *cost-effectiveness* untuk menghasilkan nilai ICER sebagai dasar pengambilan keputusan terapi. Data diperoleh dari rekam medis elektronik dan data keuangan rumah sakit dengan data pasien periode 2015–2023 dan *time horizon* waktu 5 tahun. Analisis kaplan-meier dan log rank test digunakan untuk melihat hubungan DFS dan terapi. Analisis CEA dilakukan dengan mencari nilai ICER.

Sebanyak 43 pasien memenuhi kriteria inklusi (21 tamoksifen dan 22 letrozole). Hasil menunjukkan rerata DFS letrozole sedikit lebih tinggi (59 bulan) dibandingkan tamoksifen (58,5 bulan), namun tidak berbeda signifikan secara statistik (p>0,05). Total biaya medis langsung lebih tinggi tidak berbeda signifikan pada kelompok letrozole (Rp 69,625,350) dibandingkan tamoksifen (Rp55,013,921). Nilai ICER sebesar Rp 29,222,858 per tambahan satu bulan DFS. Kesimpulannya, letrozole memberikan efektivitas yang lebih baik dibandingkan tamoksifen, namun dengan konsekuensi peningkatan biaya, sehingga pemilihan terapi perlu mempertimbangkan aspek klinis dan ekonomi.

Kata kunci: Letrozole, Tamoxifen, Cost-effectiveness, Early-Stage Breast Cancer, Postmenopausal.

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ABSTRACT

Hormonal therapies such as letrozole and tamoxifen require further research regarding their comparative cost-effectiveness in Indonesia to support more rational treatment selection that is clinically effective, efficacious, and economical. Studies conducted in several countries have demonstrated that letrozole has superior effectiveness compared to tamoxifen. However, the cost of hormonal therapy with letrozole is higher. Therefore, this study aims to analyse direct medical costs, therapeutic effectiveness based on disease-free survival (DFS), and the incremental cost-effectiveness ratio (ICER) between letrozole and tamoxifen.

This study employed an analytical observational design using a retrospective cohort approach. The study subjects were postmenopausal breast cancer patients with ER/PR-positive and HER2-negative status. In this pharmacoeconomic study, the clinical outcome was measured using disease-free survival (DFS) as the parameter of treatment effectiveness. Meanwhile, the cost component was assessed as direct medical costs from the hospital perspective. These two parameters were subsequently integrated into a cost-effectiveness analysis (CEA) to generate the incremental cost-effectiveness ratio (ICER) as a basis for therapeutic decision-making. Data were obtained from electronic medical records and hospital financial databases, covering patients from the period 2015 to 2023, with a time horizon of 5 years. Kaplan–Meier analysis and the log-rank test were used to evaluate the association between DFS and treatment. The CEA was conducted by calculating the ICER.

A total of 43 patients met the inclusion criteria (21 in the tamoxifen group and 22 in the letrozole group). The results showed that the mean DFS for letrozole was slightly higher (59 months) compared to tamoxifen (58.5 months), although the difference was not statistically significant ($p > 0.05$). The total direct medical cost was higher in the letrozole group (Rp 69,625,350) compared to the tamoxifen group (Rp55,013,921), but this difference was also not statistically significant. The ICER value was Rp. 29,222,858 per additional month of effectiveness gained. In conclusion, letrozole provides slightly better effectiveness than tamoxifen but at a higher cost; therefore, treatment selection should consider both clinical and economic aspects.

Keywords: *Letrozole, Tamoxifen, Cost-effectiveness, Early-Stage Breast Cancer, Postmenopausal*