KAJIAN FARMAKOEKONOMI DAN *BIOCHEMICAL PROGRESSION-FREE SURVIVAL* (bPFS) PENGGUNAAN REGIMEN *ANTHRACYCLINE, CYCLOPHOSPHAMIDE-TAXANE* (AC-T) BERDASARKAN STATUS KETERLAMBATAN DIAGNOSIS PASIEN KANKER PAYUDARA

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ABSTRAK

Kajian Farmakoekonomi dan *Biochemical Progression-Free Survival* (bPFS) Penggunaan Regimen *Anthracycline, Cyclophosphamide-Taxane* (AC-T) berdasarkan Status Keterlambatan Diagnosis Pasien Kanker Payudara

Keterlambatan diagnosis kanker payudara menurunkan respons sitoreduksi kemoterapi, mempercepat pemburukan biologis, serta memicu lonjakan pembiayaan kesehatan multiperspektif. Penelitian ini bertujuan mengevaluasi efikasi klinis penanda tumor serial, kesintasan bebas progresivitas biokimiawi (*biochemical Progression-Free Survival*/bPFS), utilitas humanistik, serta profil farmakoekonomi komprehensif dari regimen *Anthracycline, Cyclophosphamide-Taxane* (AC-T) 8 siklus berdasarkan status keterlambatan diagnosis. Penelitian observasional analitik dengan pendekatan ganda terintegrasi ini dilaksanakan di RSUP Dr. M. Djamil Padang: kohort retrospektif (N = 49) mengevaluasi kinetika serum CA 15-3, kesintasan bPFS (*Kaplan-Meier*/*Cox regression*), pendorong biaya rumah sakit (*Generalized Linear Model Gamma log-link* perspektif *Healthcare Provider*), dan efektivitas-biaya klaim tarif INA-CBGs (*Cost-Effectiveness Analysis*/CEA *perspektif Payer*); sedangkan studi potong lintang prospektif (N = 91) mengukur utilitas EQ-5D-5L praterapi melintasi 4 fase klinis kemoterapi untuk mengonstruksi pemodelan pohon keputusan (*Cost-Utility Analysis*/CUA perspektif *Societal*). Hasil penelitian membuktikan bahwa kadar *baseline* CA 15-3 tidak berhubungan dengan karakteristik awal pasien ($p > 0,05$). Kelompok *non-delay* neoadjuvan mencapai penurunan CA 15-3 yang signifikan ($p = 0,007$) dan mempertahankan bPFS 90% hingga 30 bulan, sementara status *delay* meningkatkan risiko progresivitas sebesar 5,596 kali lipat (HR = 5,596). Kelompok *non-delay* unggul signifikan pada indeks utilitas Fase IV (0,911 vs 0,782; $p = 0,004$). Stadium TNM lanjut merupakan pendorong biaya utama rumah sakit ($p < 0,001$). Dari perspektif *Payer*, strategi *non-delay* menghemat klaim > Rp10 juta per pasien dengan nilai ICER yang dominan mutlak di Kuadran II. Pemodelan pohon keputusan dan PSA 10.000 iterasi mengonfirmasi dominansi CUA *dengan Net Monetary Benefit* (NMB) positif yang kokoh. Disimpulkan bahwa penatalaksanaan diagnosis tepat waktu (*non-delay*) unggul secara klinis dan dominan mutlak secara ekonomi di seluruh perspektif, menegaskan urgensi makroekonomi penguatan program deteksi dini nasional.

Kata kunci: kinetika CA 15-3, kemoterapi AC-T, keterlambatan diagnosis, analisis farmakoekonomi, kanker payudara

ABSTRACT

Pharmacoeconomic Study and Biochemical Progression-Free Survival (bPFS) of the Anthracycline, Cyclophosphamide-Taxane (AC-T) Chemotherapy Regimen Use Based on Diagnostic Delay Status in Breast Cancer Patients

Diagnostic delay in breast cancer compromises chemotherapy cytoreduction, accelerates biological progression, and escalates multi-perspective healthcare expenditures. This study aimed to evaluate the clinical efficacy of serial tumor markers, biochemical progression-free survival (bPFS), humanistic health utilities, and the multi-perspective pharmacoeconomic profiles of the standardized 8-cycle Anthracycline, Cyclophosphamide-Taxane (AC-T) regimen based on diagnostic delay status. An observational analytic investigation with an integrated dual-approach design was conducted at RSUP Dr. M. Djamil Padang: a retrospective per-protocol cohort (N = 49) evaluated serum CA 15-3 kinetics, bPFS intervals (Kaplan-Meier/Cox regression), hospital cost-drivers via Generalized Linear Model (GLM) Gamma log-link regression (Healthcare Provider Perspective), and prospective INA-CBGs claim tariffs for Cost-Effectiveness Analysis (CEA, Payer Perspective); a prospective cross-sectional cohort (N = 91) evaluated pre-treatment EQ-5D-5L utilities across 4 clinical chemotherapy phases to construct a Decision Tree Cost-Utility Analysis (CUA, Societal Perspective). Findings revealed that baseline CA 15-3 levels had no significant association with initial clinicopathological parameters ($p > 0.05$). The neoadjuvant non-delay cohort achieved significant biomarker reduction ($p = 0.007$) and maintained a 90% 30-month bPFS rate, whereas diagnostic delay increased progression hazard by 5.596-fold (HR = 5.596). Non-delay patients sustained superior Phase IV utility recovery (0.911 vs. 0.782, $p = 0.004$). Advanced TNM stage was the primary hospital cost-driver ($p < 0.001$). From the Payer Perspective, non-delay care saved > IDR 10 million per patient, yielding strongly dominant ICERs in Quadrant II. Decision tree modeling and 10,000-iteration PSA confirmed robust societal CUA dominance with substantial positive Net Monetary Benefit. In conclusion, prompt diagnostic management (non-delay) provides clinical superiority and absolute economic dominance across provider, payer, and societal perspectives, substantiating the macroeconomic value of nationwide early detection policies.

Keywords: CA 15-3 kinetics, AC-T regimen, diagnostic delay, pharmacoeconomic evaluation, breast cancer