Efikasi Biocurcumin terhadap Indeks Apoptosis dimediasi Thioredoxin Reductase-1 pada Pasien Karsinoma Sel Skuamosa Serviks Stadium IIIB = Efficacy of Biocurcumin Against Thioredoxin Reductase-1 Mediated Apoptosis Index In Cervical Squamous Cell Carcinoma Patients Stage IIIB

Puja Agung Antonius, author

Abstrak

Latar Belakang: Pasien kanker serviks di Indonesia 70 % datang pada stadium lanjut, 45,2% dengan stadium IIIB dan radiasi menjadi terapi utama. Radioresistensi menjadi masalah utama saat ini, namun radiosensitizer yang tersedia memiliki efek toksisitas tinggi. Curcumin sebagai fitofarmaka bisa menjadi alternatif radiosensitizer dengan cara menekan aktivitas enzim antioksidan thioredoxin reductase-1 dan memicu terjadinya proses apoptosis. Tujuan: Menilai efikasi Biocurcumin dalam menekan aktifitas thioredoxin reductase-1 dan pengaruhnya terhadap indeks apoptosis Metode: Penelitian payung uji klinis ini dilakukan di Divisi Ginekologi Onkologi Departemen OBGYN FKUI serta Departemen Biokimia FKUI. Dilakukan penelusuran archived data jaringan dari penelitian uji klinis utama. Pemeriksaan aktifitas thioredoxin reductase-1 pre dan pasca radiasi dilakukan pada 18 sampel yang diberi terapi radiasi dan BCM-95 serta 19 sampel dengan radiasi dan plasebo. Metode McCord dan Fridovich dipakai menggunakan kit human TrxR1(Thioredoxin Reductase-1) Elabscience. Dilakukan analisis perbedaaan kadar thioredoxin reductase-1 sebelum dan sesudah radiasi serta hubungan antara perubahan kadar thioredoxin reductase-1 dengan indeks apoptosis pada kedua kelompok. Hasil: Terdapat perbedaan bermakna perubahan rerata kadar thioreduxin reductase-1 pada kelompok yang mendapat terapi radiasi dan Biocurcumin dibandingkan kelompok yang mendapat terapi radiasi dan plasebo, nilai p = 0,02 (p < 0,05). Namun, tidak terdapat hubungan yang bermakna antara perubahan rerata Indeks Apoptosis pada kedua kelompok (nilai p>0,05). Selain itu juga tidak ada perbedaan nilai median pada perubahan kadar thioredoxin reductase-1 maupun perbedaan nilai rerata pada perubahan Indeks Apoptosis sebelum dan sesudah radiasi diantara keduanya (p > 0,05). Kesimpulan: BCM-95 efektif menurunkan rerata kadar thioredoxin reductase-1, namun tidak terdapat perbedaan indeks apoptosis pada kedua kelompok.

.....Background: Cervical cancer patients in Indonesia 70% come at an advanced stage, 45.2% with stage IIIB and radiation being the main therapy. Radioresistence is a major problem nowadays, but available radiosensitizers have a high toxicity effect. Curcumin as phytopharmaceuticals can be an alternative radiosensitizer by suppressing the activity of antioxidant enzyme thioredoxin reductase-1 and triggering the occurrence of apoptosis process. Objective: Assessing the efficacy of Biocurcumin in suppressing thioredoxin reductase-1 activity and its effect on apoptosis index Method: This clinical trial umbrella research was conducted in the Division of Oncology Gynaecology, OBGYN Department FMUI as well as the Department of Biochemistry FMUI. Archived network data from major clinical trial research. Examination of thioredoxin reductase-1 pre and post radiation activity was conducted on 18 samples given radiation therapy and BCM-95 and 19 samples with radiation and placebo. The McCord and Fridovich methods were used using the Human TrxR1(Thioredoxin Reductase-1) Elabscience kit. An analysis of the difference in thioredoxin reductase-1 levels before and after radiation and the relationship between changes

in thioredoxin reductase-1 levels and apoptosis index in both groups. Results: There was a meaningful difference in the average level of thioreduxin reductase-1 in the group that received radiation therapy and Biocurcumin compared to the group that received radiation therapy and placebo, the value $p = 0.02$ ($p < 0.05$). However, there is no meaningful relationship between the changes in the average of Apoptosis Index in both groups ($p>0.05$). In addition, there was no difference in the median value in the change in thioredoxin reductase-1 levels or the difference in average value in the changes in the Apoptosis Index before and after radiation between the two ($p > 0.05$). Conclusion: BCM-95 effectively lowered average levels of thioredoxin reduxtase-1, but there was no difference in apoptosis index in both groups.