Pengaruh suplementasi nutrisi tinggi polyunsaturated fatty acids terhadap respons tumor pada kanker serviks stadium lanjut yang mendapat radioterapi : kajian terhadap respons klinis, histopatologis, kadar PGE2 dan VEGF serum = Effect of nutritional supplements enriched polyunsaturated fatty acids on tumor response in advanced cervical cancer who received radiotherapy : the study of clinical response, histopathological response, the levels of PGE2 and VEGF serum

Sri Wuryanti, author

Abstrak

Latar balakang. Sekitar 75% kanker leher rahim datang ke rumah sakit dalam stadium lanjut. Terapi utama kanker serviks stadium lanjut adalah radioterapi. Kombinasi terapi radiasi dengan kemoterapi ternyata tidak menghasilkan respons terapi yang lebih baik, tetapi bahkan menimbulkan efek samping yang lebih berat dibandingkan terapi radiasi saja. Perubahan pola makan saat ini, diduga berpengaruh pada respons terapi. Rasio asupan Polyunsaturated Fatty Acids (PUFA) n-6 : n-3 sekitar 1-2 : 1 dapat melawan pertumbuhan kanker. Beberapa publikasi melaporkan bahwa PUFA n-3 (AL n-3) mempunyai efek pro-apoptosis, anti-inflamasi, anti-proliferatif dan anti-angiogenik. Penelitian ini bertujuan untuk mengetahui apakah suplementasi nutrisi tinggi PUFA bersamaan dengan terapi radiasi dapat meningkatkan respons tumor pada kanker serviks stadium lanjut.

Metode. Penelitian ini merupakan Randomized Clinical Trial, double blind pada pasien kanker serviks stadium lanjut, jenis karsinoma sel skuama yang hanya mendapat terapi radiasi di Departemen Radioterapi, Rumah Sakit Cipto Mangunkusumo (RSCM), Jakarta. Subjek penelitian diambil secara konsekutif, melalui randomisasi dibagi dua kelompok, yaitu kelompok perlakuan dan kontrol. Selama radiasi subjek penelitian mendapat suplementasi nutrisi mengandung isokalori dan isoprotein dengan rasio AL n-6 : n-3 = 1,27 : 1 dan kontrol. Selama perlakuan dilakukan evaluasi setiap lima kali radiasi, meliputi BB dan efek samping radiasi akut. Parameter yang dinilai adalah respons klinis, respons histopatologis serta perubahan kadar PGE2 dan VEGF serum.

Hasil. Sebanyak 31 subjek dari 45 subjek dapat menyelesaikan penelitian. Sebelum perlakuan, status sosio-demografi, pola asupan AL n-6 dan n-3, status gizi dan klinis tidak didapatkan perbedaan bermakna. Setelah perlakuan, didapatkan penurunan kadar PGE2 serum pada kelompok perlakuan, sedangkan kelompok kontrol mengalami kenaikan (p = 0,127). Penurunan kadar VEGF kelompok perlakuan lebih besar dibanding kontrol (p = 0,626). Respons klinis dan respons histopatologis kelompok perlakuan lebih baik dibanding kontrol, dengan kemaknaan masing-masing p = 0,172 dan p = 0,169. Secara statistik belum didapatkan perbedaan yang bermakna pada penurunan kadar PGE2 dan VEGF serum, respons klinis dan respons histopatologis, tetapi didapat kemaknaan klinis yang nyata pada kelompok perlakuan dibanding kontrol. Analisis statistik gabungan dari respons klinis, respons histopatologis, kadar PGE2 dan VEGF serum didapatkan respons tumor total yang bermakna (p = 0,048).

Kesimpulan. Suplementasi nutrisi tinggi PUFA dengan rasio asam lemak n-6 : n- 3 = 1,27 : 1 pada kanker serviks stadium lanjut bersama terapi radiasi memberikan respons tumor total yang lebih baik.

.....
Background. Approximately 75% of uterine cervical cancer came to the hospital in an advanced stage. Primary therapy of advanced cervical cancer is radiotherapy. The combination of radiotherapy with chemotherapy did not give better outcomes, but even cause more severe side effects than radiotherapy. Changes in dietary intake at this time, are supposed to influence the response to therapy. The ratio of n-6 to n-3 polyunsaturated fatty acids (PUFA) about 1-2: 1 can fight cancer growth. Several publications stated that n-3 PUFA has pro- apoptotic effect, anti-inflammatory, anti-proliferative and anti-angiogenic. This study aimed to examine whether radiotherapy combined with daily nutritional supplements enriched PUFA enhance tumor response in advanced cervical cancer.
Method. This study was a double-blind Randomized Clinical Trial (RCT) in patients with advanced squamous cell cervical cancer, received radiation only as control group, and those who received nutritional supplementation containing isocaloric and isoprotein with ratio of n-6 : n-3 PUFA = 1.27: 1 as treatment group. This study was performed in the Department of Radiotherapy Dr. Cipto Mangunkusumo General Hospital (RSUPNCM), Jakarta. Evaluation was done every five times radiation, including Karnofsky Perfomance Scale, body weight and side effects of acute radiation. Parameters assessed were clinical and hematological response, histopathological response and changes in the levels of PGE2 and VEGF serum.
Results. A total of 31 subjects from 45 subjects participated the study completely. Prior to treatment, socio-demographic status, patterns of n-6 and n-3 PUFA, clinical and nutritional status were analyzed, no significant differences were noted. After treatment, a decrease in serum PGE2 levels in the treatment group was found, while in the control group increased (P = 0.127). VEGF in the treatment group declined higher than controls (P = 0.626). Treatment group showed significant better clinical response and histopathological responses compared to the control group (p = 0.172 and p = 0.169). No significant differences were found in the reduction of PGE2 and VEGF serum levels, clinical response and histopathological response, although from clinical standpoint there is a better significant response in the treatment group than the control. The combined statistical analysis of clinical response, histopathological response, PGE2 and VEGF serum levels obtained total tumor response (P = 0.048).
Conclusion. Nutritional supplementation enriched PUFA (ratio of n-6: n-3 PUFA = 1.27 : 1) in advanced cervical cancer receiving radiotherapy gives better total tumor response.