Efektivitas fototerapi light emitting diode terhadap kejadian radiodermatitis pada pasien keganasan kepala dan leher = Light emitting diode phototherapy to reduce the incidence of radiation dermatitis in patients with head and neck cancer

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Abstrak

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Latar belakang dan tujuan: efek samping radioterapi pada kulit, yang disebut dengan radiodermatitis, merupakan masalah bagi pasien keganasan kepala dan leher yang menjalani radioterapi. Efek samping yang terjadi dapat menurunkan kepatuhan pasien berobat, sehingga dapat meningkatkan angka putus terapi. Dua studi pendahulu telah mempelajari light emitting diode (LED) untuk mengurangi kejadian radiodermatitis dengan hasil yang berlawanan. Penelitian ini ingin mempelajari lebih lanjut mengenai efektivitas LED untuk menurunkan kejadian radiodermatitis.
Metode: pada kelompok perlakuan, subjek penelitian (SP) mendapat tambahan fototerapi LED segera setelah radioterapi selesai. Fototerapi LED diberikan selama radioterapi berlangsung. Penilaian derajat radiodermatitis dilakukan oleh peneliti setiap lima kali radioterapi dijalani, menggunakan kriteria menurut Common Terminology Criteria for Adverse Event (CTCAE) yang dimodifikasi.
Hasil: kejadian radiodermatitis antara kelompok kontrol dan perlakuan hampir sama dan tidak berbeda bermakna secara statistik. Berdasarkan analisis kecenderungan, terlihat bahwa terjadi peningkatan persentase jumlah SP dengan radiodermatitis pada kelompok kontrol sebesar dua kali lipat saat rerata dosis radiasi kumulatif 34 Gy, sedangkan pada kelompok perlakuan baru meningkat saat rerata dosis radiasi kumulatif 44 Gy. Rasa gatal, lesi eritematosa, dan hiperpigmentasi lebih dahulu dialami oleh kelompok kontrol. Pada pemantauan 2 minggu pasca radioterapi terlihat bahwa persentase SP dengan radiodermatitis menurun lebih cepat pada kelompok perlakuan.
Kesimpulan: fototerapi LED tidak dapat menurunkan kejadian radiodermatitis pada pasien keganasan kepala dan leher, namun mempunyai kecenderungan untuk menurunkan kejadian radiodermatitis saat rerata dosis radiasi kumulatif 34 Gy hingga mencapai dosis 44 Gy. Fototerapi LED juga dapat menunda terjadinya rasa gatal, lesi eritematosa, dan hiperpigmentasi, serta mempercepat penyembuhan radiodermatitis. Diperlukan studi lebih lanjut untuk membuktikan hipotesis ini dengan memperhitungkan saran dari peneliti.
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ABSTRACT
Background and objectives: radiation dermatitis remains a common problem in patients with head and neck cancer. This side effect causes discomfort, pain, and may lead to treatment delay. Two previous studies using light emitting diode (LED) phototherapy to prevent radiation dermatitis have been reported, with a completely different result. This study sought to further evaluate the effectiveness of LED phototherapy in lessening radiation dermatitis.
Method: in the LED treatment group, all subjects with head and neck cancer received LED phototherapy after each radiation treatment. Reactions were evaluated every five treatments by the author, using the modified Common Terminology Criteria for Adverse Event (CTCAE) criteria.

Results: instances of radiodermatitis amongst the control and the treated group has no clinical or statistical differences. Based on trend analysis, the fourth week of the study (mean cumulative radiation dose 34 Gy) shows a two-fold increase in the number of subject developing radiodermatitis in the control group. On the other hand, the treated group experiences an increase in the number of subject developing radiodermatitis on the fifth week (mean cumulative radiation dose 44 Gy). The control group experiences itching sensation, erythematous and hyperpigmented lesion sooner than the treated group. Two weeks after radiation therapy, the percentage of subject experiencing radiodermatitis decreases faster.
Conclusions: LED phototherapy did not reduce the incidence of radiation dermatitis, but there is a patterned trend which show LED phototherapy may reduce radiation dermatitis when the mean cumulative radiation dose 34 Gy until it reaches 44 Gy. LED phototherapy tend to delay development of itching sensation, erythematous and hyperpigmented lesion, also accelerate radiodermatitis healing process. Further study needed to prove this hypothesis.;Background and objectives: radiation dermatitis remains a common problem in patients with head and neck cancer. This side effect causes discomfort, pain, and may lead to treatment delay. Two previous studies using light emitting diode (LED) phototherapy to prevent radiation dermatitis have been reported, with a completely different result. This study sought to further evaluate the effectiveness of LED phototherapy in lessening radiation dermatitis.
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