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supportive care

1533P LOW LEVEL LASER THERAPY FOR THE MANAGEMENT OF RADIATION DERMATITIS: PRELIMINARY RESULTS OF A PILOT STUDY IN BREAST CANCER PATIENTS

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Aim: The aim of this study was to assess the efficacy of low level laser therapy (LLLT) in managing radiation dermatitis (RD) in breast cancer patients.

Methods: This prospective study compared two successive groups of breast cancer patients undergoing identical radiotherapy regime post-lumpectomy. The first group received our standard skin care protocol (CTRL group, N=27) and the second one, this standard protocol plus LLLT (6 sessions), starting at fraction 20 of radiotherapy (LLLT group, N=27). Other patients' and treatment characteristics were equivalent between groups. LLLT was provided two times a week, using a laser characterized by two assembled laser diodes with synchronized emissions at 808 nm and 905 nm, respectively. The energy density was fixed at 4 J/ cm^2. Skin toxicity was assessed by trained nurses before the start of LLLT and at the end of radiotherapy according to the Radiation Therapy Oncology Group (RTOG) criteria.

Results: Skin toxicity for the CTRL and LLLT groups before LLLT and at the end of radiotherapy are presented in Table 1. Before LLLT (i.e., at fraction 20), skin toxicity was equivalent in the two groups (p = .526), with most patients presenting RTOG grade 1. At the end of radiotherapy (i.e. after 6 LLLT), however, the severity of RD significantly differed between the two groups (p = .004): There was a significant intensification of RD in the CTRL but not in the LLLT group. **Table 1.** Skin toxicity for the control (CTRL) group and the group receiving low level laser therapy (LLLT) before the start of LLLT (at fraction 20) and at the end of radiotherapy (RT, after 6 LLLT-sessions).

Table: 1533P

	CTRL group			LLLT group		
	Before LLLT	End RT	p*	Before LLLT	End RT	p*
RTOG grade						
	N (%)	N (%)	.012	N (%)	N (%)	.491
0	3 (11.1)	0		2 (7.4)	0	
1	23 (85.2)	19 (70.4)		25 (92.6)	27 (100)	
2	1 (3.7)	8 (29.6)		0	0	

* Chi-square test or Fisher's exact test (two-tailed).

Conclusions: Typically, RD evolves into more severe forms as radiation therapy progresses, as observed in our control patients. LLLT seemed to have stopped this progression of RD, as skin toxicity remained stable throughout radiotherapy in patients receiving LLLT. These findings indicate a beneficial effect of LLLT on RD in breast cancer patients. This is the first prospective study to evaluate the potential of LLLT for RD. These promising results warrant further research on the efficacy of LLLT in preventing and managing acute RD.

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