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Homeopathy for the prevention of radiation dermatitis in patients with breast cancer: Randomized placebo controlled trial

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Introduction: Radiation dermatitis is most common side effects of radiotherapy during cancer treatment, causing itching and pain, treatment delays, and diminished aesthetic appearance-and poor quality of life. The aim of the study was to assess the effect of homeopathy treatment on radiation-induced skin reactions in breast cancer patients.

Materials & Methods: Double-blinded, randomized placebo controlled trial recruited patients from 3 cancer centers in North India. 160 patients after the surgery scheduled for postoperative radiotherapy were randomized in either homeopathy (n=80) or placebo group (n=80). Provider-assessed maximum grade of common terminology criteria for adverse events (CTCAE) was primary endpoint of the study. Secondary endpoints included the Skindex-16, the skin toxicity, symptom experience and quality of life self-assessment. Assessment was performed at baseline, weekly during radiotherapy, and for 4 weeks after.

Results: In total, 148 patients completed (homeopathy, n=76; placebo, n=72). Follow up showed significant difference in maximum grade of radiation dermatitis by homeopathy (P<0.5). CTCAE toxicity was greater in placebo group (P=0.002). After the treatment, homeopathy group showed less itching (P<0.0001), less irritation (P<0.0001), less symptom persistence or recurrence (P=0.000), and less annoyance with skin problems (P=0.002); less burning sensation (P=0.002). Also, during follow-up period, less percentage of patients in homeopathy (23.6%) developed dermatitis compared to placebo group (77.8%) which indicates sooner improvement of these patients.

Conclusion: Patients receiving daily homeopathy during radiotherapy was significantly more effective in reducing radiation dermatitis.

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Novel highly specific anti-periostin antibodies uncover the functional importance of the fascilin 1-1 domain and highlight preferential expression of periostin in aggressive breast cancer

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Periostin (POSTN), a secreted homodimeric protein that binds integrins αvβ3, αvβ35 and α6β4, was originally found to be expressed in fetal tissues and in the adult upon injury, particularly bone fractures, due to its role in remodeling and repair. Recently, it was found to be over-expressed in human breast cancer and a variety of other tumor types including head and neck squamous cell carcinoma, where its overexpression correlates with increased tumor invasion. Progress in studying its functional role in tumor pathogenesis has been hampered by the paucity of antibodies for its specific and sensitive detection. It has proven very difficult to obtain monoclonal antibodies (mAbs) against this highly conserved protein but we report here that combining infection of mice with lactate dehydrogenase elevating virus (LDV), a B cell activating arterivirus, with conjugation of human POSTN to ovalbumin as an immunogenic carrier, enabled us to develop 6 mAbs recognizing both human and mouse POSTN and inhibiting its binding to v 3 integrin. Two of the mAbs, MPB4B1 and MPC5B4, were tested and found to inhibit POSTN-induced migration of human endothelial colony forming cells. All 6 mAbs recognized amino acids 136-51 (APSNEAWDNLDSDIRR) within the POSTN fascilin (FAS) 1-1 domain revealing the functional importance of this motif; this was further highlighted by the ability of aa 136-151 peptide to inhibit integrin-mediated cell migration. Immunohistochemistry using MPC5B4 indicated that breast tumor cell POSTN expression was a strong prognostic indicator, along with tumor size, lymph node and human epidermal growth factor receptor 2 (HER2) status.

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