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Robert Thomas

Bedford and Addenbrooke's Cambridge University Hospitals, UK

Preventing chemotherapy-induced onycholysis - A double blind, randomised trial of a polyphenol rich nail bed – The UK polybalm study

Background: Distressing nail damage is common amongst patients receiving chemotherapy, especially taxanes, causing disfigurement, secondary infection and interference with activities of daily living. Cooling the nails beds has some success and moisturising nail balms are often advised popular but there has been little published evidence for their effectiveness. This investigation evaluated whether a topical balm containing bioactive polyphenolic rich herbs and oils could protected the nail beds via their reported anti-inflammatory, analgesic, anti-oxidant and anti-microbial properties.

Methods: 61 patients (23M, 38F) were randomized to apply to their nail beds (2-3/day) the natural balmor a petroleum balm, scented for a placebo control. Demographics, type and number of cycles did not differ between the two groups, recruited between Sept 2015-Sept 2016. At baseline and at the end of chemotherapy both patients and physicians recorded outcomes of nail health based on symptoms, clinical examination and photographs. Differences were analyzed using an unpaired t-test.

Results: In all but 2 of the 30 patients in the polybalm cohort, there was virtually no nail damage compared to more than half suffering significant damage and distress in the placebo group. The patients in the polybalm group who still had moderate damage also suffered from other severe chemotherapy complications including neutropenic sepsis, diarrhoea and peripheral neuropathy. There were no reported balm related adverse toxicities. The precise mean fall in nail health over the course of chemotherapy were:

A. Patient reported:

1. Dermatology Life Quality questionnaire: Placebo (-6.10); Polybalm (-0.034); difference 6.062; confidence intervals (CI) 4.17 to 7.95 ($p < 0.0001$).
2. Linear severity Scale Placebo (-64.1); polybalm (2.63) difference (66.72; CI: 52.97 to 80.47; ($p < 0.0001$).

B. Physician reported:

1. Nail Psoriasis Index: Placebo (-5.71); Polybalm (0.0); difference 5.71; CI 4.29 to 7.12; ($p < 0.0001$)
2. Linear severity Scale: Placebo (-66.1); Polybalm (-5.79); difference 60.30; CI 45.29 to 75.32 ($p = < 0.0001$).

Conclusion: The polyphenolics rich essential oils and plant-based waxes in this nail bed balm profoundly reduced chemotherapy related nail damage and improved nail related quality of life compared to a petroleum-based balm.

Biography

Robert Thomas is a Professor of Biological and Exercise Science at Coventry University and a Clinical Teacher at Cambridge University. He leads a research team of oncology nurses and doctors at the Primrose Unit Bedford Hospital, which has an academic interest in the evaluation of nutritional, lifestyle and self-help strategies after cancer. The team has over 50 studies including the world's largest randomized evaluation of a polyphenol rich nutritional supplement. He is an Editor of the lifestyle and cancer website (cancernet.co.uk) and the general health website (keep-healthy.com) and designed the 1st UK approved course and qualification in cancer exercise rehabilitation. For his efforts to improve the long term wellbeing of patients, he was awarded the British Oncology Association Oncologist of the Year and Hospital Doctor Magazine UK Doctor of the Year.

Robert.thomas@bedfordhospital.nhs.uk