INTRODUCTION

- Actinic keratoses (AKs) are lesions characterized by a proliferation of dysplastic keratinocytes that occur on photaged skin as a result of ultraviolet radiation. They have malignant potential and are recognized precursors to squamous cell carcinoma (SCC).\(^1\)\(^2\)
- The estimated annual risk of evolution of AK to SCC is between 0.15% and 80% for patients with multiple AKs. Because it is not feasible to predict which AK lesions will become malignant, treatment of all AKs is recommended.\(^1\)
- Current treatment for AK lesions includes cryotherapy (LN2) and topical 5-fluorouracil (5-FU). Patients have reported local adverse reactions with this therapy including erythema, dryness, pruriitus, and irritation.\(^3\)
- Vitamin D derivatives have demonstrated anti-proliferative properties in cancer treatment via stimulation of the vitamin D3 receptor, which can be found on keratinocytes.\(^4\)
- Topical vitamin D has been shown to decrease the number of AK lesions. Recent research suggests that topical vitamin D derivatives may be efficacious in the treatment of AKs.\(^5\)

METHODS

- This was a retrospective analysis of patients presenting with AKs in a clinical dermatology office setting.
- Three treatment groups were evaluated with 50 patients per group: 1) LN2, 2) LN2 with short-contact topical 5-FU 1% cream, 3) LN2 with short-contact topical 5-FU 1% cream and calcipotriene foam.
- Lesion count was assessed and cryotherapy was administered on AK lesions at baseline visit. Patients in the groups #2 and #3 were then instructed to begin short-contact treatment with a 5-FU foam (group #2) or 5-FU and calcipotriene foam (group #3) follow-up visits were scheduled for 1, 3, and 6 months.
- At each follow-up visit, AK lesion count was assessed and AKs treated with cryotherapy. Patients were also asked to report any side effects.
- Patient assessments and lesion counts were only performed at scheduled follow-up evaluation visits.
- ANCOVA analysis was used to adjust for imbalances in baseline AK lesion count.

RESULTS

- A decrease in total AK lesion count was noted at months 1, 3, and 6 using measures of central tendency, but a statistically significant decrease in total lesion count was only observed at month 6 compared to baseline count (p=0.03383).
- Upon further analysis, treatment with LN2 followed by short-contact topical 5-FU and calcipotriene foam (group #3) showed a greater mean decrease in number of AKs than treatment with LN2 alone (group #1) or LN2 followed by short-contact topical 5-FU (group #2) (Figure 1).
- Using Tukey Contrasts, a statistical difference in total AK lesion counts was only observed in group #3 (LN2 followed by short-contact 5-FU and calcipotriene foam) (p=0.0255) (Figure 2).
- Upon further analysis, treatment with LN2 followed by short-contact combination therapy of calcipotriene foam with 5-FU than patients being treated with LN2 alone and LN2 followed by short-contact 5-FU was associated with a lower rate of irritation (10%) than treatment with LN2 followed by short-contact treatment with topical 5-FU alone (30%). Irritation rates were also markedly lower than those reported in clinical trials (39%).\(^6\) It is likely that the short-contact method of application resulted in tolerability improvement.
- Cryotherapy followed by short-contact topical calcipotriene foam in combination with 5-fluorouracil cream may offer increased efficacy and safety in the treatment of actinic keratoses.
- Multicenter, randomized, placebo-controlled trials are needed to confirm these findings.

REFERENCES


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