

Topical Sinecatechins, 10%, Ointment for Superficial Basal Cell Carcinoma

Citation for published version (APA):

Kessels, J., Voeten, L., Nelemans, P., Cleutjens, J., Hillen, L. M., Mosterd, K., & Kelleners-Smeets, N. W. J. (2017). Topical Sinecatechins, 10%, Ointment for Superficial Basal Cell Carcinoma: A Randomized Clinical Trial. *JAMA Dermatology*, 153(10), 1061-1063. <https://doi.org/10.1001/jamadermatol.2017.2529>

Document status and date:

Published: 01/10/2017

DOI:

[10.1001/jamadermatol.2017.2529](https://doi.org/10.1001/jamadermatol.2017.2529)

Document Version:

Publisher's PDF, also known as Version of record

Document license:

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Results | Of 88 participants approached, 87 agreed to participate (Table). Group 1 (n = 45) responded to study questions in a dimly lit auditorium and group 2 (n = 40) in a clinic room with natural light. Overall, correct color identification irrespective of background color or illumination was mean (SD) 44.82% (8.96 ± 1.77). In the unmatched analysis, participants who answered the questions in a dimly lit room had a higher overall score (9.40 ± 1.64) when compared to those who answered the questions in a room lit with natural light (8.55 ± 1.84; $P = .014$). In the matched analysis, colors better identified on a cool background included lesions representing melanoma 95% ($P < .001$), nevus 87% ($P = .001$), xanthoma 71% ($P = .001$), cherry angioma 71% ($P = .018$), and pseudomonas 55% ($P = .028$). Colors more accurately identified on a warm background included lesions representing port wine stain 32% ($P < .001$), blue nevus 84% ($P < .001$), lichen planus 92% ($P = .022$), pityriasis rosea 25% ($P = .051$), and lentigo 48% ($P = .104$).

Discussion | This study highlights the heterogeneity of color perception, with 44.82% of lesion colors being correctly identified by participants. Color perception involves a complex interplay of physical properties of light, individual physiological responses,³ illumination, and background color.⁴ Color theories are quite complex with no consensus to date. For example, more correct identification of pink hues associated with lichen planus against the warm background can be explained by chromatic assimilation, a type of contrast in which the appearance of the stimulus is shifted toward the background color.⁵ However, more accurate identification of the purple of port-wine stain was made against a complementary background, which is thought to facilitate identification of colors on the opposite end of the color spectrum through factors that may increase saturation and brightness.⁶ Regarding illumination, participants in a dimly lit room had a higher overall score when compared to those in a room with natural light. Notably, we found no association of age, sex, underlying ophthalmologic conditions, and handedness with color perception.

The current study found that significant variability in color identification and perception exists, providing preliminary insight into the importance of background color and room illumination on correct color identification of skin lesions. Limitations include a small sample size, nonrandomized respondent population, and possible residual confounding. Larger studies are needed to further explore the impact of external factors on color perception when diagnosing skin lesions.

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Accepted for Publication: March 12, 2017.

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Published Online: May 31, 2017. doi:10.1001/jamadermatol.2017.1016

Author Contributions: Drs Vashi and Maymone had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

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Conflict of Interest Disclosures: None reported.

Conflict of Interest Disclosures: None reported.

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Topical Sinecatechins, 10%, Ointment for Superficial Basal Cell Carcinoma: A Randomized Clinical Trial

There is an ongoing search for noninvasive and targeted therapies in dermato-oncology. Superficial basal cell carcinoma (BCC), in particular, is accessible for topical treatments.

Epigallocatechin-3-gallate (EGCG) is an active constituent of green tea. It is assumed that EGCG has a cytotoxic effect, inhibits cell growth, induces apoptosis, and might inactivate β -catenin signaling of the Wingless (Wnt) pathway.¹ Most sporadic BCCs have identifiable mutations in the patched (*PTCH1*) gene, an inhibitor of the Hedgehog (Hh) pathway. There is some evidence that the Wnt pathway might also be involved in BCC development.² Deregulation of this pathway causes accumulation of nuclear β -catenin protein, leading to tumor development.³ This indicates that EGCG could possibly be a candidate for BCC treatment.

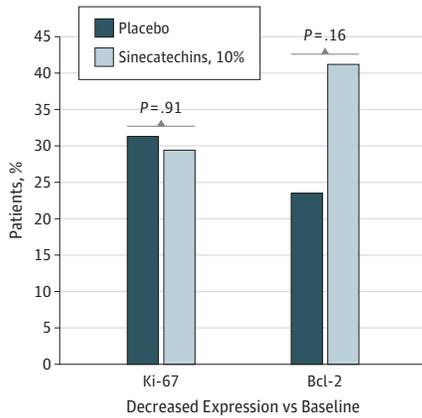
Sinecatechins ointment, 10%, contains EGCG and is currently registered to treat anogenital warts. To our knowledge, this is the first clinical study evaluating its efficacy in the treatment of superficial BCC.

Methods | The study was approved by the Maastricht University Medical Center institutional review board, registered at clinicaltrials.gov (NCT02029352), and conducted in a

single university dermatology clinic. The protocol is available in the Supplement. Patients with a primary histologically proven superficial BCC of 4 to 20 mm in greatest diameter were included. Excluded were immunosuppressed patients or patients with genetic skin cancer disorders and tumors in the face and/or hairy

scalp. After informed consent was given, patients were randomly assigned to either topical sinecatechins ointment, 10%, or placebo ointment. The ointment was applied twice daily for 6 weeks by patients at home. All tumors were excised after 8 weeks. Follow-up visits took place at baseline, 3, 6, and 8 weeks. All investigators were blinded to treatment allocation.

Figure 1. Immunohistochemical Analysis

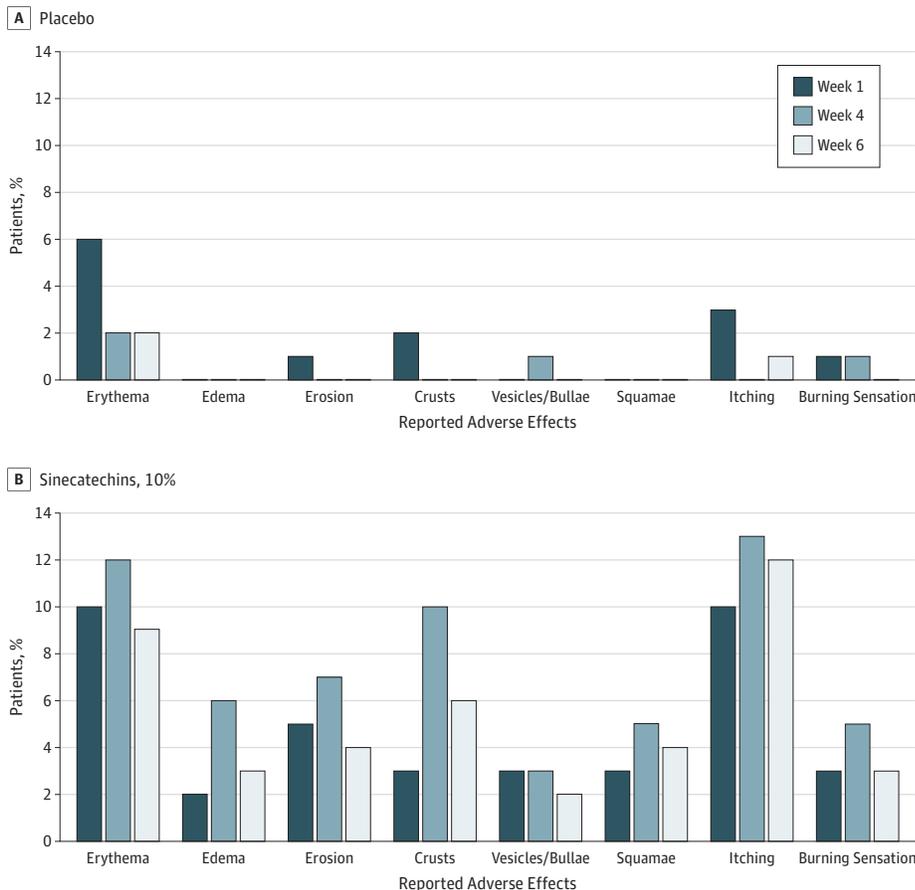


This figure shows the proportion of patients with decreased Ki-67 and Bcl-2 expression after treatment, compared with baseline.

The primary outcome was the proportion of patients with complete histological tumor clearance. Secondly, adverse events and the proportion of patients with decreased immunohistochemical expression of Ki-67 (proliferation) and Bcl-2 (B-cell lymphoma 2; anti-apoptosis) between excision and baseline biopsy were evaluated.

Results | Between November 2014 and September 2015, 89 patients were assessed for eligibility. A total of 42 patients were included, and 39 completed follow-up. Complete histological tumor clearance was observed in 1 of 21 (5%) and 2 of 21 (10%) patients in the sinecatechins and placebo group, respectively ($P > .99$). Decrease in tumor size was slightly greater after sinecatechins application, but the difference was nonsignificant ($P = .15$). Decrease in Bcl-2 expression was nonsignificantly more frequent in the sinecatechins group than in the placebo group (7 of 17 [41%] vs 4 of 17 [24%]; $P = .16$) and decrease in Ki-67 occurred in similar proportions (5 of 17 [29%] vs 5 of 16 [31%]; $P = .91$) in patients for whom data were

Figure 2. Local Adverse Events



This figure shows the percentage of patients with moderate to severe local skin reactions during treatment for the sinecatechins, 10%, and placebo groups.

available (Figure 1). Use of the sinecatechins ointment led to a statistically significant higher frequency of erythema, edema, erosions, crusts, and itching (Figure 2).

Discussion | No significant difference in histological tumor clearance between the sinecatechins and placebo groups was found in our study. The few complete tumor clearances that were observed probably reflect a biopsy-induced immune response.

Both Ki-67 and Bcl-2 were used in previous studies to assess the efficacy of BCC therapy, but results are not completely consistent between studies.^{4,5} We observed a slightly more frequent decrease in Bcl-2 expression in the sinecatechins group. Unexpectedly, we also observed a decrease in Bcl-2 and Ki-67 expression in a proportion of patients in the placebo group. A previously hypothesized biopsy-induced tumor regression could play a role.

The observed lack of efficacy in the present study might be because of insufficient EGCG uptake in the tumor cells. Encapsulation of EGCG in liposomes with deoxycholic acid and ethanol increased the drug deposition in a previous study.

In other studies, green tea polyphenols have been shown to reduce UV-induced inflammation, photoaging, and immunosuppression.⁶ Perhaps the suggested effect of EGCG is preventive rather than curative.

In conclusion, we did not observe supporting evidence for topical sinecatechins ointment, 10%, in the present formula to treat superficial BCC.

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Accepted for Publication: May 30, 2017.

Published Online: August 9, 2017. doi:10.1001/jamadermatol.2017.2529

Author Contributions: Drs Kessels and Voeten had full access to all of the data in the study and take responsibility for the integrity of the data and the accuracy of the data analysis.

Study concept and design: Cleutjens, Hillen, Mosterd, Kelleners-Smeets.

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Administrative, technical, or material support: Kessels, Cleutjens, Hillen.

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Conflict of Interest Disclosures: None reported.

Funding/Support: This study was supported in part by Willpharma BV, the Netherlands, which supplied study medication (sinecatechins ointment, 10%, and placebo ointment).

Role of the Funder/Sponsor: The study sponsor had no role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.

Trial Registration: ClinicalTrials.gov Identifier: NCT02029352

Additional Contributions: We thank Maarten van Hoof, Department of Pathology, Maastricht University Medical Center, for collecting and preparing histopathology specimens and P.J. Steijlen, MD, PhD, Department of Dermatology, Maastricht University Medical Center, for his critical review of the manuscript. We are grateful to V. Winnepenninckx, MD, PhD, Department of Pathology, Maastricht University Medical Center, for her participation in study setup and assisting with the interpretation of histopathological specimens. We are especially thankful for the effort that Kiki Frencken, MD, Department of Dermatology, Maastricht University Medical Center, put into the design and setup of this study. They did not receive compensation for their contributions.

Additional Information: Kiki Frencken died in 2015.

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OBSERVATION

Treatment of Elastosis Perforans Serpiginosa Using a Fractional Carbon Dioxide Laser

Elastosis perforans serpiginosa (EPS) is a rare skin condition characterized by hyperkeratotic papules and transepidermal elimination of abnormal elastic fibers.¹ The treatment of EPS remains highly challenging, and the location of the lesions mainly on sensitive areas complicates the therapeutic approach.

Report of a Case | We report the case of a woman in her 40s with a history of EPS after prolonged administration of D-penicillamine for Wilson disease. The EPS lesions were located first on the neck (Figure, A) and the buttocks. Later, the inguinal and elbow folds and the perineum were progressively affected. Several treatments had been attempted, including topical retinoids, topical imiquimod, cryotherapy, and photodynamic therapy. The tolerance of these treatments was poor, with frequent irritation, and none of them provided any efficacy.

Given the severity of her liver disease, the discontinuation of D-penicillamine treatment was not possible. Therefore, a treatment of the EPS using fractional carbon dioxide (CO₂) laser was proposed. A limited area was treated initially to test the efficacy and tolerance. Three sessions were performed, 1 per