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Study of oral retinol, with or without medical sun protection, in patients with actinic keratosis

Submission date	Recruitment status	[_] Prospectively registered
13/05/2026	No longer recruiting	[_] Protocol
Registration date	**Overall study status**	[_] Statistical analysis plan
18/05/2026	Completed	[X] Results
Last Edited	**Condition category**	[_] Individual participant data
14/08/2026	Skin and Connective Tissue Diseases	

Plain English summary of protocol
Not provided at time of registration

Contact information

Type(s)
Public, Scientific, Principal investigator

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Additional identifiers

Study information

Scientific Title
Efficacy and safety of oral retinol, alone or combined with medical photoprotection, in patients with actinic keratosis: a randomized, controlled, prospective, multicentric study

Study objectives
The aim of this study was to evaluate the efficacy and tolerability of oral vitamin A, administered alone (the "In" strategy) or in combination with medical photoprotection (a film-forming medical device containing SPF 50+ sunscreen and piroxicam 0.8%, the “In & Out" strategy), in modulating

the progression of actinic damage in subjects with mild-to-moderate actinic keratosis, compared with a control group.

Ethics approval required
Ethics approval required

Ethics approval(s)
Approved 12/01/2023, Medizioni (Via Monte delle Gioie, Roma, 00199, Italy; +39 (0)631050390; medizioni@medizioni.it), ref: DC 01-2023

Primary study design
Interventional

Allocation
Randomized controlled trial

Masking
Open (masking not used)

Control
Active

Assignment
Parallel

Purpose
Prevention

Study type(s)

Health condition(s) or problem(s) studied
Actinic keratosis (AK)

Interventions
Participants were randomized into three groups using a computer-generated allocation sequence. The patients were allocated across three treatment groups in a 1:1:1 ratio. Group A received oral vitamin A (50,000 IU daily for 6 consecutive months), in addition to standardized sun-protection recommendations. These included limiting sun exposure, avoiding direct sunlight between 10:00 and 14:00, wearing protective clothing and wide-brimmed hats, avoiding tanning devices, and applying sunscreen with SPF ≥30 daily. Group B received oral vitamin A at the same dosage in combination with medical photoprotection, consisting of a film-forming medical device containing SPF 50+ sunscreen and piroxicam 0.8%, applied twice daily to the face and scalp for 6 months. Group C (control group) received only standardized sun-protection recommendations.

Intervention Type
Mixed

Primary outcome(s)
1. Treatment efficacy measured using the Actinic Keratosis and Severity Index at baseline, month 3 (T3), month 6 (T6, end of the treatment), month 9 (T9, follow-up)

Key secondary outcome(s)
1. Global clinical efficacy measured using using a five-point scale ranging from “very good” to “very poor,” based on overall changes in AK lesions, at baseline, month 3 (T3), month 6 (T6, end of the treatment), month 9 (T9, follow-up)

2. Global lesion clearance measured using a similar five-point scale, specifically focused on lesion resolution at baseline, month 3 (T3), month 6 (T6, end of the treatment), month 9 (T9, follow-up)

3. Treatment tolerability measured using a four-point scale, where 0 indicated excellent tolerability (no symptoms) and 3 indicated poor tolerability (severe pain, itching, or burning), at baseline, month 3 (T3), month 6 (T6, end of the treatment), month 9 (T9, follow-up)

4. Safety measured using systematic documentation of all adverse events at baseline, month 3 (T3), month 6 (T6, end of the treatment), month 9 (T9, follow-up)

5. In a predefined subgroup of 13 patients from Groups A and B: non-invasive imaging analysis including epidermal and dermal thickness, stratum corneum thickness, and evaluation of keratinocyte atypia, graded as mild, moderate, or severe, measured using line-field confocal optical coherence tomography (LC-OCT) at month 3

Completion date
15/04/2026

Eligibility

Key inclusion criteria
Adults aged 18 to 80 years with up to six clinically diagnosed AK lesions

Healthy volunteers allowed
No

Age group
Mixed

Lower age limit
18 Years

Upper age limit
80 Years

Sex
All

Total final enrolment
117

Key exclusion criteria
1. Presence of more than six AK lesions
2. Use of nicotinamide within 6 months prior to enrollment
3. History of skin cancer

4. Organ transplantation
5. Pregnancy or lactation

Date of first enrolment
01/04/2023

Date of final enrolment
13/05/2025

Locations

Countries of recruitment
Italy

Sponsor information

Organisation
Cantabria Labs Difacooper

Funder(s)

Funder type

Funder Name
Cantabria Labs Difacooper

Results and Publications

Individual participant data (IPD) sharing plan

IPD sharing plan summary
Not expected to be made available

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		13/08/2026	14/08/2026	Yes	No