Follow-up results of a randomized, double-blind, phase III, multi-center study to evaluate the safety and efficacy of BF-200 ALA versus placebo in field-directed treatment of mild to moderate actinic keratosis with photodynamic therapy (PDT) when using narrowband red light

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Synopsis

Topical photodynamic therapy (PDT) is a non-invasive treatment option for skin diseases such as non-melanoma skin cancer. In general, there are three requirements for PDT: a photosensitizer, molecular oxygen and light of a specific wavelength. Commonly, dermatological PDT is based on the topical application of a prodrug to the skin, which is then converted by the cells, especially by neoplastic cells, into the actual photosensitizer. The activation of this photosensitizer by light induces the formation of reactive oxygen species (ROS). If a sufficient amount of ROS is obtained, cell death is induced. One extensively studied prodrug is 5-aminolevulinic acid (ALA), an endogenous precursor for the heme biosynthesis, which is converted into the photosensitizer protoporphyrin IX (PpIX).[1]
BF-200 ALA is a gel containing 7.8% 5-aminolevulinic acid in a nanoscale lipid vesicle formulation. It is approved under the brand name Ameluz® for lesion- and field-directed actinic keratosis (AK) treatment on face and scalp in the US and for treatment of mild-to-moderate AK on face and scalp and superficial and nodular basal cell carcinoma (BCC) in the EU.

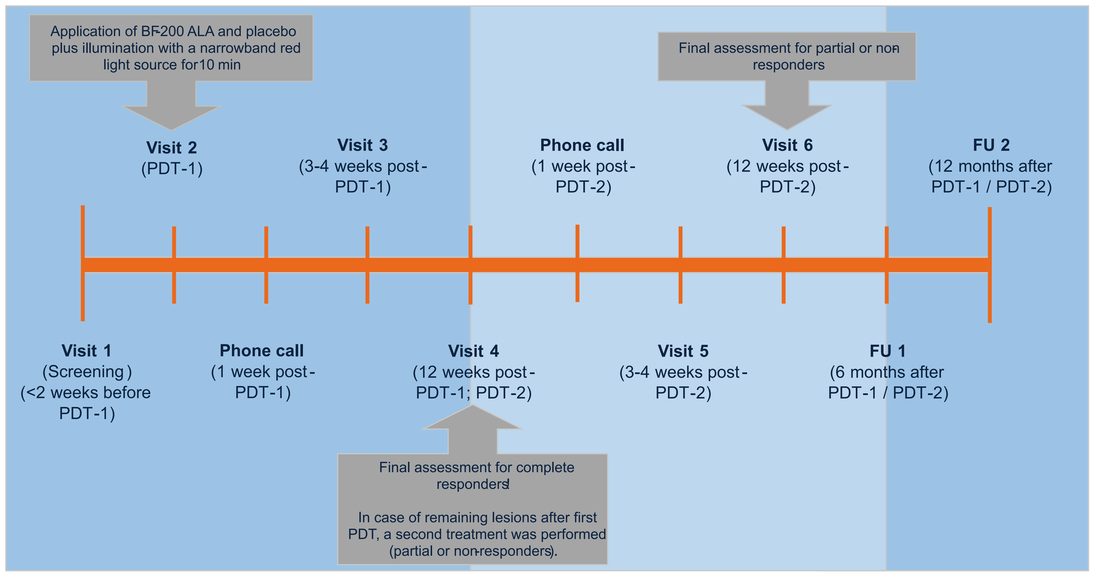
Objective

- The pivotal Phase III study (NCT01966120) was performed to evaluate the sustained efficacy, disease recurrence and patient satisfaction with BF-200 ALA for the field-directed treatment of mild-to-moderate AK with PDT using BF-RhodoLED® (~635 nm; 37J/cm²), a narrowband, red light illumination source .

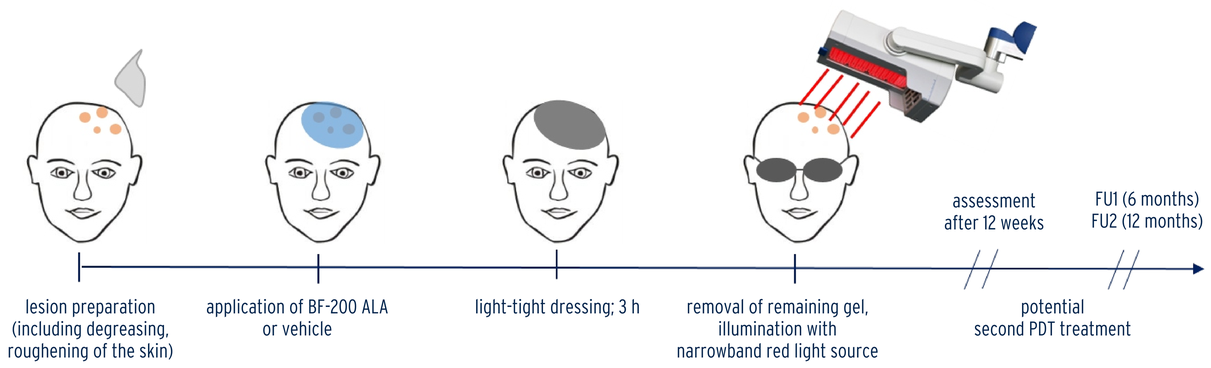
Endpoints[2]
- Primary endpoint: Overall patient complete response rate assessed 12 weeks after the last PDT

Methods

Medication
- BF-200 ALA gel (contains 10% ALA hydrochlorid equivalent to 7.8% 5-aminolevulinic free acid (ALA))
- vehicle to BF-200 ALA gel



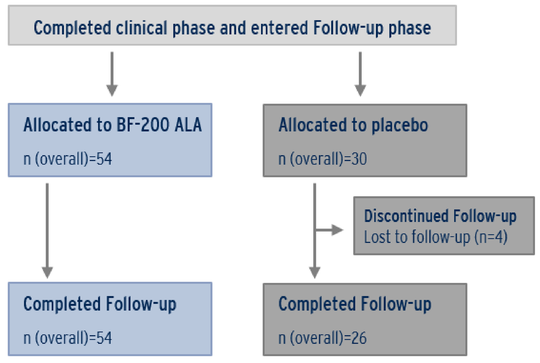
Schematic overview: PDT for AK treatment on face and scalp



Results

NCT01966120

A. Patient flow during FU

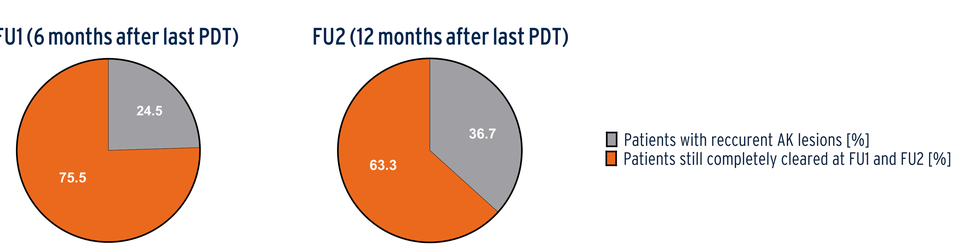


B. Clinical Efficacy

- Compared to the BF-200 ALA group, only a small number of patients were complete responders 12 weeks after the last PDT in the placebo group (49 vs. 7 patients)

BF-200 ALA:

Patient recurrence rates of complete responders treated with BF-200 ALA at FU1 and FU2

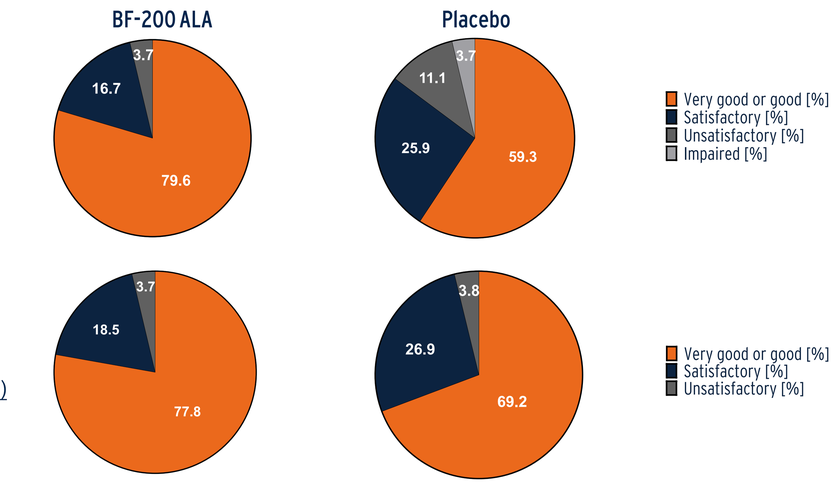


Placebo:

- One of 7 complete responders in the placebo group had recurrent AK lesion at FU1 (14.3% for the complete responders) and no one had recurrent AK lesions at FU2

C. Patient satisfaction

Patient satisfaction of patients at FU1 and FU2



Conclusion

- BF-200 ALA is approved for lesion- and field-directed treatment of AK
- High clearance rate of field-directed therapy with BF-200 ALA and narrowband red light is followed by low recurrence rates for mild-to-moderate AK lesions
- Most patients were satisfied with this treatment modality

This study is sponsored by Biofrontera Bioscience GmbH (Germany).

References

1 Reinhold, Uwe (2017): A review of BF-200 ALA for the photodynamic treatment of mild-to-moderate actinic keratosis. In: Future oncology (London, England) 13 (27), S. 2413-2428. DOI: 10.2217/fon-2017-0247.
2 Reinhold U, Dirschka T, Ostendorf R, Aschoff R, Berking C, Philipp-Dormston WG, Hahn S, Lau K, Jäger A, Schmitz B, Lübbert H, Szeimies RM. A randomized, double-blind, phase III, multicentre study to evaluate the safety and efficacy of BF-200 ALA (Ameluz®) vs. placebo in the field-directed treatment of mild-to-moderate actinic keratosis with photodynamic therapy (PDT) when using the BF-RhodoLED® lamp. Br J Dermatol. 2016; 175(4):696-705.