Efficacy of cold atmospheric plasma versus diclofenac 3% gel in patients with actinic keratoses/field cancerization: preliminary results of a prospective, randomized, rater-blinded study (ACTICAP)

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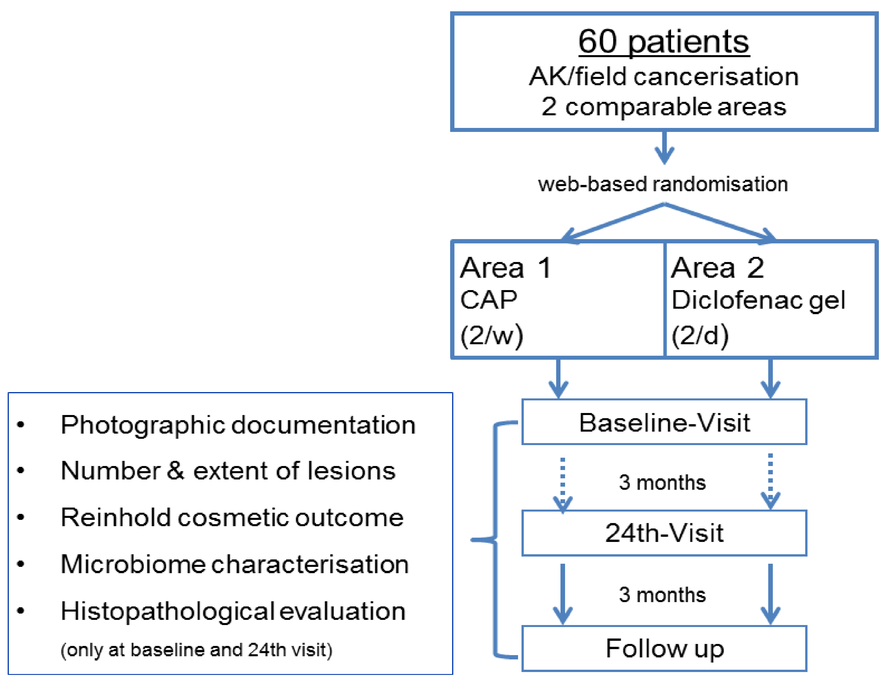
INTRODUCTION

- Actinic keratoses (AK) represent the most common skin malignancy worldwide and are considered the earliest stage of squamous cell carcinoma (SCC). Importantly, up to 20% of AK transform into invasive SCC within 10-25 years.
- Conventional treatments for AK and field cancerization bear significant side effects and/or are restricted to small skin areas. Thus, there is a continuing need for effective as well as non-toxic lesion- and field-directed therapies for AK.
- Cold atmospheric plasma (CAP) is a partially ionized gas containing a mixture of reactive oxygen and nitrogen species.
- In addition to the well-documented antimicrobial properties of CAP, growing evidence points to antitumoral effects *in vitro* and *in vivo* as well as in clinical settings [1,2]. Moreover, anecdotal observations suggested promising clinical response in several subjects with AK treated with various CAP devices [3].

OBJECTIVE

- To compare the clinical efficacy and safety of cold atmospheric argon plasma versus diclofenac 3% gel in patients with AK/field cancerization.

MATERIALS AND METHODS



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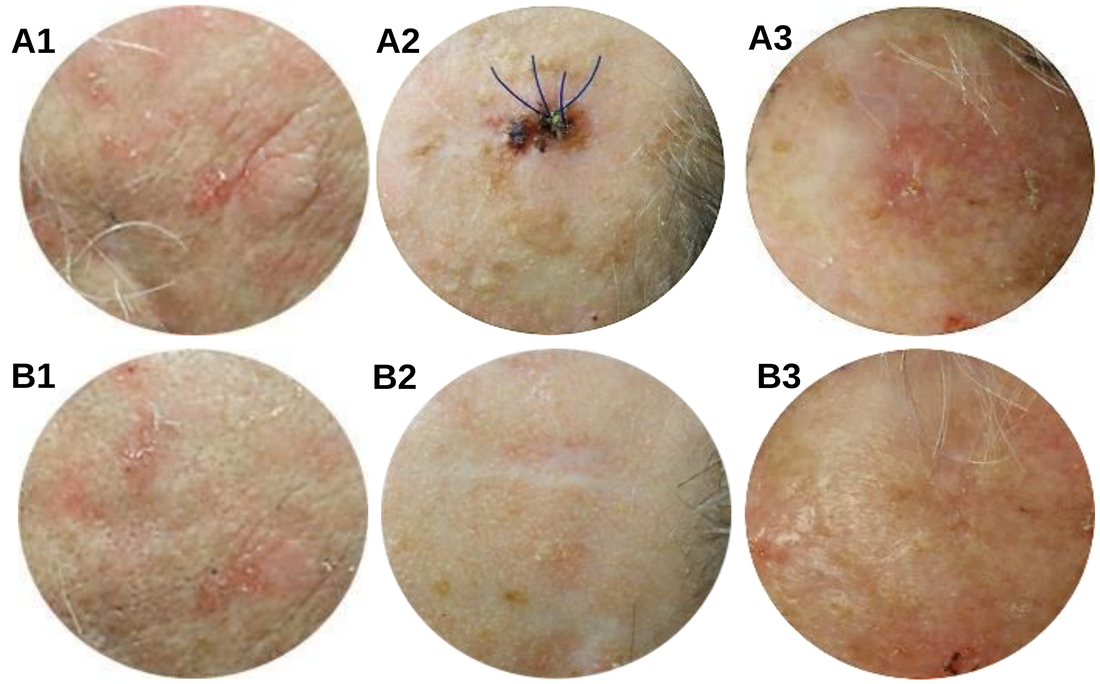
RESULTS

- The current results are based on data from 34 study subjects.
- After the final treatment, the total number of AK within the CAP-treated areas was reduced on average by 43% versus 22% within the diclofenac-treated areas. Similarly, the surface area affected by AK decreased by 47% (CAP) as compared to 32% (diclofenac). There were no CAP-related adverse effects.
- At the time of follow-up, the affected surface area was reduced by 50% (CAP) versus 26% (diclofenac). Median Reinhold cosmetic outcome scores were decreased by 2 points and 1 points post CAP and diclofenac, respectively.
- Images A1-3: before CAP, B1-3: after CAP (24th visit).



CONCLUSIONS

- CAP is a safe as well as effective tool for the treatment of AK and field cancerization.
- CAP might be especially beneficial for patients in whom non-toxic treatment options are preferable, such as immunosuppressed individuals.
- CAP could be successful in cases that previously failed conventional therapies.
- The skin rejuvenating effects of CAP observed here deserve further exploration.

REFERENCES

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