

Photodynamic therapy (PDT) and waterfiltered infrared A (wIRA) in patients with recalcitrant common hand and foot warts

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Abstract

Background: Common warts (verrucae vulgares) are human papilloma virus (HPV) infections with a high incidence and prevalence, most often affecting hands and feet, being able to impair quality of life. About 30 different therapeutic regimens described in literature reveal a lack of a single striking strategy.

Recent publications showed positive results Jörg Tittelbach¹ of photodynamic therapy (PDT) with 5-aminolevulinic acid (5-ALA) in the treatment of HPV-induced skin diseases, especially warts, using visible light (VIS) to stimulate an absorption band of endogenously formed protoporphyrin IX. Additional experiences adding waterfiltered infrared A (wIRA) during 5-ALA-PDT revealed positive effects

Aim of the study: First prospective randomised controlled blind study and Allergology, Friedrich including PDT and wIRA in the treatment of recalcitrant common hand and foot warts. Comparison of "5-ALA cream (ALA) vs. placebo cream (PLC)" and "irradiation with visible light and wIRA (VIS+wIRA) vs. irradiation with visible light alone (VIS)".

Methods: Pre-treatment with keratolysis (salicylic acid) and curettage. Germany PDT treatment: topical application of 5-ALA (Medac) in "unguentum emulsificans aquosum" vs. placebo; irradiation: combination of VIS and a large amount of wIRA (Hydrosun[®] radiator type 501, 4 mm water cuvette, waterfiltered spectrum 590-1400 nm, contact-free, typically painless) vs. VIS alone. Post-treatment with retinoic acid ointment. One to three therapy cycles every 3 weeks. Main variable of interest: "Percent change of total wart area of each patient over the time" (18 weeks). Global judgement by patient and by physician and subjective rating of feeling/pain (visual analogue scales). 80 patients with therapy-resistant common hand and foot warts were assigned randomly into one of the four therapy groups with comparable numbers of warts at comparable sites in all groups.

Results: The individual total wart area decreased during 18 weeks in group 1 (ALA+VIS+wIRA) and in group 2 (PLC+VIS+wIRA) significantly more than in both groups without wIRA (group 3 (ALA+VIS) and 4 (PLC+VIS)): medians and interquartile ranges: -94% (-100%/-84%) vs. -99% (-100%/-71%) vs. -47% (-75%/0%) vs. -73% (-92%/-27%). After 18 weeks the two groups with wIRA differed remarkably from the two groups without wIRA: 42% vs. 7% completely cured patients; 72% vs. 34% vanished warts. Global judgement by patient and by physician and subjective rating of feeling was much better in the two groups with wIRA than in the two groups without wIRA.

Conclusions: The above described complete treatment scheme of hand and foot warts (keratolysis, curettage, PDT treatment, irradiation with VIS+wIRA, retinoic acid ointment; three therapy cycles every 3 weeks) proved to be effective. Within this treatment scheme wIRA as non-invasive and painless treatment modality revealed to be an important, effective factor, while photodynamic therapy with 5-ALA in the described form did not contribute recognisably - neither alone (without wIRA) nor in combination with wIRA - to a clinical improvement. For future treatment of warts an even improved scheme is proposed: one treatment cycle (keratolysis, curettage, wIRA, without PDT) once a week for six to nine weeks.