



Imperial College

OF SCIENCE, TECHNOLOGY AND MEDICINE

PHOTOTHERAPY WITH BLUE (415 NM) AND RED (660 NM) LIGHT IN THE TREATMENT OF MILD TO MODERATE ACNE VULGARIS

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Propionibacterium acnes contain porphyrins which can be excited by light at 415 nm leading to killing of the bacteria. Light at 660 nm has been shown to have an impact on wound healing. For these reasons, we conducted a study to examine the efficacy of light at 415 nm and 660 nm in the treatment of mild to moderate acne vulgaris.

107 patients with mild to moderate acne vulgaris were recruited into the study with informed, written consent and were randomised into 4 treatment groups – blue light at 415 nm, mixed blue (415 nm) and red (660 nm) light, cool white light and 5% benzoyl peroxide cream. Patients in the phototherapy groups were provided with portable light sources and irradiation was carried out daily for 15 minutes with eye protection. The benzoyl peroxide was used twice daily. Patients were reviewed each four weeks for 12 weeks.

At the end of the trial a 76% improvement in inflammatory lesions was observed in the blue/red light treated group which was significantly superior to the blue light, white light or benzoyl peroxide treated groups. The final mean improvement in comedones in the blue/red light treated group was 58% which was better than the other treatment groups but this did not reach statistical significance. Patients and investigator assessments at the end of the trial showed >80% of patients in the blue/red light treatment groups showing a moderate to marked improvement in their acne.

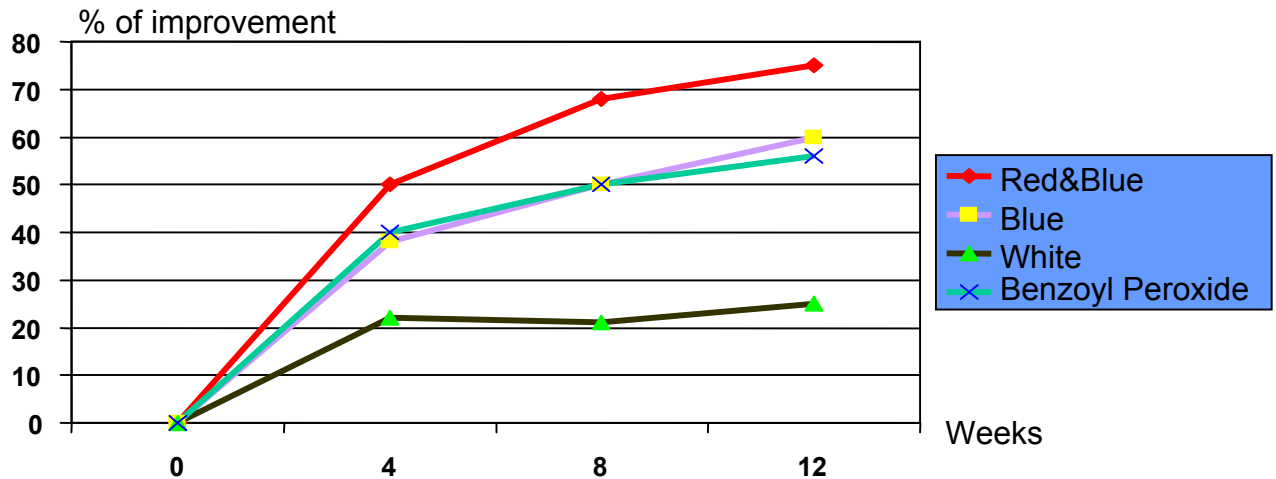
Few side effects were observed in any treatment groups. 20% of patients in the benzoyl peroxide group complained of dryness or irritation of the skin. One patients using the blue/red light treatment observed transient redness of the skin after treatment.

The results of this study demonstrate the value of this novel treatment modality in the treatment of mild to moderate acne vulgaris.

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Average improvement of infected pimples:



Average improvement of not-infected pimples:

