Abstract

Background and Objectives: The flare up induced by isotretinoin during the first two months of acne treatment is a common unwanted effect. The increased inflammatory immune response due to destruction of p. acnes bacteria is suspected.

High intensity narrow band 405-420nm light sources, (iClear/ClearLight/Clear100) were found to be effective both in the photodestruction of p. acnes bacteria in vitro and in vivo, and in the reduction of proinflammatory cytokines in keratinocytes cultures. The purpose of the current study was to examine if the exposure to a high intensity 405-420nm light has an effect on the incidence and the severity of isotretinoin induced acne flare ups.

Study Design/Material and methods: 40 Patients with a severe acne received 8 sessions of blue light (iClear, CureLight Ltd.), twice a week during a month, and had a follow up visit every month for 3 months. Oral isotretinoin was prescribed to all patients (0.6mg/kg) for 8 months. The group A was treated by the blue light for four weeks prior to starting isotretinoin. The group B started blue light and isotretinoin simultaneously.

Results: Both groups (22 patients) had less flare ups than expected with full dose of isotretinoin (<30%). Flare ups occurred more frequently and lasted longer in group A (11 patients) than in group B (11 patients).

Conclusions: Acne phototherapy by high intensity narrow band 405-420nm light when associated during the first month with oral isotretinoin, is diminishing the occurrence of flare ups induced by isotretinoin.

Introduction

Isotretinoin (Accutane/Roaccutane®) therapy of acne has been associated with inflammation, exacerbation, and acne fulminans [1, 2, 3, 4, 5, 6, 7]. Flare ups usually appear 3-5 weeks after commencing isotretinoin therapy. These flare ups cause a major social and psychological burden to the patients and may induce severe long lasting scarring. Severity varies from one patient to another. Young acne patients, males and patients with large white comedones prior to therapy are more susceptible to develop acne flare ups during isotretinoin therapy.

It was observed that improvement occurs upon suspension of isotretinoin or reduction of the dose, and that increases in dosage aggravates inflammatory symptoms.

Clark and Cunliffe [2] studied 980 patients treated with isotretinoin. They reported a flare of acne in 59 patients. Most patients had the flares within 3-5 weeks of commencing treatment. Mean percentage increase in acne grade was 38%. Severity of flares was closely related to extent and size of non inflamed large comedones >1.5 mm present prior to treatment.

Pre-existing sebaceous gland occlusion has been emphasized as a predisposing factor in several other reports [2, 8, 9]. Clark and Cunliffe hypothesize that the decreased size of the sebaceous glands caused by the Isotretinoin cause an abrupt destruction of p. acnes causing the release of large number of antigens. These antigens provoke an outstanding local inflammatory response clinically manifested as acne flare up or acne fulminans.

The role of the initial dose is controversial. Some authors note aggravation at doses of 1 mg/kg/day [2, 10], but cases of acne fulminans have been reported with doses lower than 0.5 mg/kg/day [1, 11]. Karvonen et al. described seven patients with acne fulminans induced by isotretinoin. The mean isotretinoin dose in these patients was 37 mg/day and flare up started on average 7 weeks after isotretinoin was started. The initial site of acne does not appear to be a predictor of aggravation, as patients acne flared on both the trunk and face.

Treatment of flares is controversial. The following have been proposed: continuation of isotretinoin alone [1, 12] or associated with systemic steroid therapy [7, 13]; reduction of the dose of isotretinoin in association with systemic steroid therapy [14, 15]; and suspension of isotretinoin [16] and institution of systemic steroid therapy [4, 6, 8, 14] at doses of 0.5 to 1 mg/kg/day. High intensity narrow band 405-420nm light sources, (iClear/ClearLight/Clear100) were found to be effective both in the photodestruction of p. acnes bacteria in vitro and in vivo, and in the reduction of proinflammatory cytokines in keratinocytes cultures. [17-21]
The purpose of the current study was to examine if the exposure to a high intensity 405-420nm light has an effect on the incidence and the severity of isotretinoin induced acne flare ups.

Material and methods

Forty patients were enrolled in the study. All patients with a severe acne received 8 sessions of blue light (iClear, CureLight Ltd.), twice a week during a month, and had a follow up visit every month for 3 months. Oral isotretinoin was prescribed to all patients (0.6mg/kg) for 8 months.

Group A was treated by the blue light for four weeks previously to the beginning of isotretinoin. Group B started blue light and isotretinoin simultaneously.

Results

Both groups (22 patients) had less flare ups than expected with full dose of isotretinoin (<30%). Flare ups occurred more frequently and lasted longer in group A than in group B. Figures 1-3.

Conclusions

A recently published study by Holland et al. shows a clear relationship between tendency to scarring after acne to peri follicular inflammatory process in the individual patient [22]. Acne phototherapy with high intensity violet/blue light recently gained a prominent place in the armamentarium of acne therapy [17-21]. It was proven to be effective as an alternative to antibiotic anti acne therapy and for patients that do not need, can not or are reluctant to have isotretinoin oral therapy. This study shows that acne phototherapy with violet/blue light (iClear, CureLight Ltd.) is effective in diminishing the number and severity of isotretinoin induced flare up. This is more significant when acne phototherapy is performed during the first month of oral isotretinoin treatment. It is hypothesised that violet/blue anti acne phototherapy reduces the bacterial antigen load expected 2-3 weeks after start of isotretinoin therapy and decreases the inflammatory process which is the major cause for the isotretinoin induced acne flares. This study shows that non thermal selective acne phototherapy may be an important tool when prescribing isotretinoin for acne and may reduce the incidence and severity of the acne flare up induced by these drugs.

References: