# TREATMENT PRINCIPLES AND THE IMPORTANCE OF SUNSCREEN THERAPY

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***Abstract***

*Rosacea is a dermatological disease with facial localization caused by different factors, sun exposure being etiopathogenic and aggravating the disease. The disease has 4 evolutionary stages and the treatment is complex while sun protection is the most important.*

*This paper proposes to underline the importance of therapeutic schemas in disease evolution as well as sun protection*

*The study was conducted on 25 patients with ages between 20 and 70 years old, based on anamnestic data, clinical and preclinical investigations as well as interdisciplinary consults. The study results point towards the existence of a variety of etiological factors, the most important being prolonged sun exposure. Based on the clinical manifestations, the disease staging represents an important clinical aspect in order to deliver the appropriate therapy depending on the stage. The study results underline an increased disease occurrence in patients with ages between 30 and 50 years as well as women. Also, the evolutionary stages show an increase occurrence percentage for stage II, followed by I and III having the same percentage, while stage IV having the most diminished percentage of all the patients.*

*In conclusion, rosacea is a disease with facial localization, more frequent in adult population especially womenwith clinical evolution divided in 4 stages and aggravated by sun exposure. The therapeutic response was favorable in patients which followed the indication and therapeutic schemas on the entire treatment duration and not the last, solar protection with adequate products.*

**Key words:** (maximum 6): rosacea, sun exposure, solar protection, laser therapy

## INTRODUCTION

Considered a “facial disorder”, rosacea is a dermatological disease characterized by numerous clinical manifestations localized at the facial region, with varied and complex etiology, affecting especially the adult population in 10%, especially women with the age between 40 and 50 years old.

In rosacea’s etiology there are various incriminating factors which are important, like the vascular factor through an increased facial vasomotor reactivity or other diverse factors like the endocrine one with role in igniting rosacea around the menopausal start period. The gastric infection with Helicobacter pylori, digestive disorders, alimentation factors like spices and alcohol. The presence of Demodexfoliculorum parasite and excessive development of the lipolitic flora at the facial level also contribute to disease ignition. However, an important role in the etiopathogenesis of the disease is played by the solar radiation. Emotions, sudden changes in temperature, inadequate cosmetic products, and topic treatments with corticosteroids,

some drugs, and genetic predisposition are some of the other causes for disease ignition.

Depending on the type, aspect, localization and evolution of the face lesions, in clinical practice we use a disease classification spread among 4 evolutionary stages: stage 1 of facial erythema characterized by the presence of redness on the nose and cheeks; stage II of cuperosis with erythema in teleangiectasia more or less obvious on the nose and cheeks; stage III of papula-pustular rosacea characterized by the presence of red inflamed papules and pustulas on the nose, cheeks, mid-frontal and between eyebrows, covered by flakiness all over the redness; stage IV with riniform and ocular infection. In this stage there's also the presence of a hypertrophy of the sebaceous glands on the nose and accentuated erythema.

This staging is important in practice for the establishment of adequate treatment. The treatment is complex being associated with the treatment of existing infections and digestive disorders as well as an adequate regime.

Depending on the evolutionary stage of the disease, there are used schemas and principles of therapy according to each of these stages. Therefore in stage I in order to diminish the intensity and duration of flushes, transitory erythema, ignited by emotions, sudden changes of temperature, hot foods, spices or alcohol, we use small doses of alpha or beta blockers. Clomiphene is frequently used in doses of 2 µg/kg of body per day or propranolol. Ice chip therapy by Wilkinson, pieces of sucked ice, in the case of flushes, leads to a fast vasoconstriction and reduce the erythema. Fito-therapeutic remedies are also used by applying wet compresses or acupuncture.

In stage II, of cuperosis, beside the treatment for erythema already mentioned above, the teleangiectasis can be treated by cryo-therapy, short applications of liquid nitrogen 5-8 repetitions at an interval of 2 weeks. Microinjections with screlosing substances, photo-coagulation with $CO_2$-Argon laser or colored laser.

Treatment is completed by application of hydrating crèmes without perfume and mandatory, daily application of photo-protecting crèmes with a factor of protection above 30, preferably SPF 50. As vascular protection, Detiolex can be associated by taking 2 pills in the morning.

In stage III of rosacea papulo-pustular, the treatment schema is more complex. Antibiotics are administered systemically, like Tetracycline in doses of 500mg taken twice a day for 2 weeks, then dropping to once per day, then twice per week dose of 250mg. Another schema frequently used is Doxycycline in doses of 100mg twice per day, daily for 8 weeks. An increased efficiency has also Metronidazole administered for 1 month in doses of 250mg twice per day followed by a month of 250mg per day.

Other antibiotics which can be used with good results are Clindamycin, Erythromycin and Azithromycin or Trimethoprim. The therapeutic schema is completed by the local treatment. Topic application concoctions are used, in the form of creams, gels or solutions. The most frequently used is the azelaic acid under the form of a gel 15%, prepared based on Metronidazole. The hydrophilic cream made of Erythromycin 2%, o solution, Clindamycin, benzoyl peroxide, are also used in the treatment.

Stage IV with rinoform and ocular infection, rarely found mainly in elderly people, men in particular, benefits from a complex surgical treatment, systemic and local. The surgical treatment as a role in smoothing out the unevenness of the nose. Electro-coagulation, derma-abrasion and radiotherapy are other alternative treatments for rinoform.

Systemic we administer Isotretinoin in standard doses of 0.5 mg/body kg per day and it can be used before and after surgical remodeling, however the dose can be adjusted depending on the patient. In the case of ocular infection, depending on the severity it's recommended to use wet compresses, cream antibiotics like Fucidin, Metronidazole associated depending on the case with derma-corticosteroids, Hydrocortisone 1%, rigorous ocular hygiene.

These treatments are completed in all stages of rosacea with hygiene and dietary measures by avoiding hot and exciting foods, alcohol, cold, sudden changes of temperature, sauna and strong emotions. It is very important to avoid sun exposure due to the aggravating impact of solar radiations. At all stages it is mandatory to use photo-protecting creams with a protection factor of 50, applied daily. A series of derma-cosmetic concoctions for daily care of the rosacea affected skin, like micellar cleansing water, gels, hydrating creams, anti-redness masks are completing the treatment.

Using cosmetic products for camouflage, for covering, allow the patients an important psychic comfort, taking into account the negative impact of the disease upon patient lives.

**MATERIAL AND METHOD**

Rosacea being a disease with an evolution spread among different clinical stages it is necessary to treat it by respecting and following some therapeutic principles and treatment schemas depending on the stage.

This is why, the purpose of this study was to point out the importance of correct application and following the principles and treatment schema, the importance of photo-protection and of analysis of results.

The study was conducted on a lot of 25 patients with ages between 20 and 70 years old, diagnosed with rosacea, coming from urban and rural

environment over a period of 32 months between 1st January 2014 and 31 August 2016, within a Private Medical Practice from Oradea.

The positive diagnosis and stage of rosacea was established based on the dermatologic and dermatoscopic exam, paraclinical investigations and interdisciplinary consults of internal medicine, endocrinology and ophthalmology.

The following parameters were evaluated: age, sex, environment of origin, alimentation, use of alcohol and other exciting substances, the history of the disorder and duration of sun exposure. The dermatologic exam investigated the presence of flushes, the presence of persistent erythema on the face, the presence and localization of teleangiectasis, presence and localization of papula or pustulas, flakiness in facial regions, hypertrophy of the nose and ocular infection.

Patients diagnosed in stage I were recommended Clonidine in doses of 2mg/kg/body/day; Ice chip therapy, laser therapy, solar protection creams with SPF 50 and dietary regime.

Patients diagnosed in stage II were recommended short sessions of cryo-therapy for 2 weeks, microinjections with sclerosing substances, Detralex 2 pills/day in the morning, therapy with laser, hygiene and dietary measures.

Patients diagnosed in stage III were placed under general treatment with antibiotics. Tetracycline, Doxycycline and Metronidazole was used in doses based on the therapeutic schemas. Treatment with creams and gels based on azelaic acid, erythromycin, and metronidazole were used locally.

In stage IV we recommended the patients surgical treatment associated with Isotretinon in standard doses of 0.5 mg/kg/body/day as per the therapeutic schema. Hygiene and dietary measures, limited sun exposure and avoidance of all factors that can possibly aggravate or incite the disease evolution. Treatment of associated disorders completed the recommendations of all patients within the study, regardless of disease stage. The emphasis was on solar protection by daily use of photo-protecting creams with SPF 50 and cosmetic camouflage.

The patients were evaluated clinically at an interval of 6 weeks, then 12 weeks, 6 months and one year.

**RESULTS AND DISSCUSION**
**RESULTS**

The study was conducted on a number of 25 patients of both sexes and with different ages, 3 men and 22 women. Age group repartition can be seen in table 1.

*Table 1*

Rosacea case repartition based on age group

| Nr. Crt. | Age Group | Nr. of cases | Percentage % |
|---|---|---|---|
| 1 | 20-29 years old | 3 | 12% |
| 2 | 30-39 years old | 4 | 16% |
| 3 | 40-49 years old | 8 | 32% |
| 4 | 50-59 years old | 7 | 28% |
| 5 | 60-69 years old | 2 | 8% |
| 6 | 70 years and above | 1 | 4% |

From the urban environment we had 15 patients, meaning 60%, while 40% translating into 10 patients from the rural environment. The results of the study showing patient repartition based on sex and stage of disorder can be found in table 2.

*Table 2*

Rosacea case repartition based on sex and disorder stage

| Nr. Crt. | Disease Stage | Nr. of patients | Percentage % | Female patients | Male patients |
|---|---|---|---|---|---|
| 1 | I | 7 | 28% | 7 | - |
| 2 | II | 10 | 40% | 9 | 1 |
| 3 | III | 7 | 28% | 6 | 1 |
| 4 | IV | 1 | 4% | - | 1 |

All patients were clinically evaluated at an interval of 6 weeks, then 12 weeks, 6 months and 1 year after treatment started based on adequate therapeutic schema depending on disease stage.

At the first evaluation, after 6 weeks of treatment, all patients found to be within stage I of the disease had a favorable evolution. The best results were recorded at 6 months after treatment start, with an almost complete disease remission.

In stage II, 4 patients, 40% had the best results by obtaining a diminishing of erythema intensity and a clear teleangiectasis reduction 6 months after treatment start. Mainly due to laser therapy.

In 80% of the patients included in stage III, we noted a clinically favorable evolution around 6 and 12 weeks of systemic treatment with antibiotics and local treatment. In 20% of the patients the clinic remission was not that obvious because these patients did not continue the antibiotic treatment only the local topical treatment and photo-protecting cream use. During the 6 months evaluation, clear remission of papula-pustular erythema was noted only in 40% of the patients which followed the treatment schema.

In stage IV we had a single patient of 70 years old which was placed under surgical treatment for nose correction, without systemic treatment due to other conflicting medication and diseases.

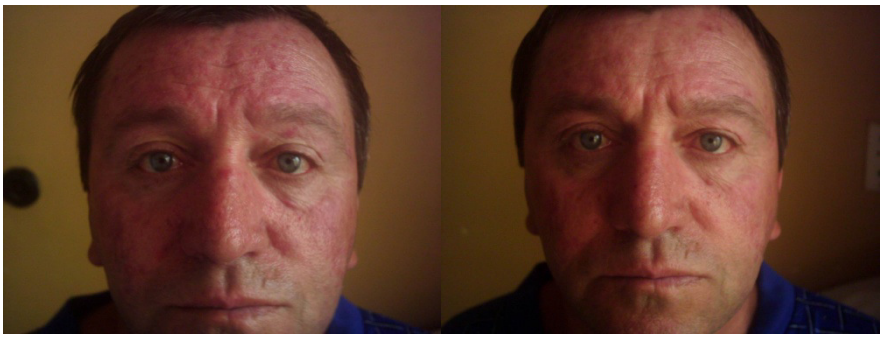
The analysis of therapeutic effects upon treatment of rosacea as per therapeutic schema and depending on disease stage, the 1 year evaluation results were different.

Therefore, in stage I patients, 50% had a good evolution with stopping the development of the disease and significantly reducing the erythema. In stage II patients, 40% noted a stop in disease development and 20% a diminishment of erythema. In stage III we noted important remissions with complete papulo-pustular reduction and erythema diminishment in 48.2% of the patients.

Solar protection with SPF50 creams noted to be used by all patients who showed favorable clinic evolution

*Picture 1*

Rosacea before treatment Rosacea after treatment



**DISCUSSIONS**

The study results show the importance of staging rosacea and following the guidelines and therapeutic schemas.

Treatment of rosacea is complex by combining surgical treatment with general antibiotic treatment, Isotretinoin, laser therapy, local treatment and most important the photo-protection treatment as well as cosmetic camouflage.

Our study's data indicates shows that the role of solar protection in all evolutionary stages of the disease is important. Patients which have interrupted the use of protection creams have noted the aggravation of the disease. The role of solar protection is underlined in literature by numerous authors which emphasize the efficacy of titan dioxide and zinc oxide products.

Patients from our study benefitted from $CO_2$ laser therapy and noted an improvement of teleangiectasis and their diminishment, another aspect underlined by other authors.

Some authors recommend administration of anti-inflammatory drugs during flushes, acupuncture and botulin injections.

In stage III, the systemic administration of Tetracycline, Doxycycline or Metronidazole as per therapeutic schemas have led to complete remissions of papulo-pustulas in patients which followed the schema, an aspect underline by other studies as well. Systemic antibiotics therapy associated with topic application of concoctions based on Metronidazole, Erythromycin, azelaic acid have contributed in obtaining remarkable results. Ivermectin, recently introduced in topical treatment of papulo-pustular rosacea had a rapid effect and even better in patients which used it.

All these, together with solar protection with photo-protecting creams for daily skin care, as well as cosmetic camouflage products have led to the favorable evolution of the disorder, with diminishment of clinical manifestations.

**CONCLUSIONS**

1. The importance of evolutionary staging of rosacea
2. The important role of respecting appropriate therapeutic schemas depending on evolutionary stage.
3. Symptoms diminishment and halting the evolution of the disease can be achieved by following the schema and indication of treatment at all times.
4. Rosacea can be aggravated in the absence of by disrupting solar protection usage with creams having an SPF of 50.
5. The positive impact of treatment correctness on patients psychic and quality of life.

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