

ROSACEA. ETIOLOGICAL ASPECTS AND STAGING

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Abstract

Rosacea is a dermatological disease with facial localization characterized by numerous clinical manifestations. This paper proposes to underline some etiological aspects and its staging studied on patients diagnosed with rosacea.

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 women.

In conclusion, the disease is frequently encountered in adult population with ages between 40 and 50 years old, having a different etiology in many of the patients. Sun exposure represents an aggravating factor of the disease, this aspect was identified in all rosacea suffering patients. The clinical evolutionary studies of the disease which were most frequently met during this study represented stages I, II & III.

Key words: rosacea, sun exposure, couperosis, teleangiectasia

INTRODUCTION

Rosacea is a dermatological disease with numerous clinical representations, facially localized and included within the acne group of diseases.

The epidemiological data shows that a more frequent occurrence of the disease can be found in the adult population, with a percentage of 10%, especially women with ages between 40 and 50 years old.

Rosacea etiology varies and is complex, with many factors which are related to it: genetic predisposition, association with other different diseases like arterial hypertension or gout. An important role is given to the vascular factor in the apparition of this disease, by suffering from facial vascular hyper-reactivity determined by various factors.

Sun exposure represents another important etiological factor having an aggravating role in the disease. The theory of infectious etiology is backed-up by the excessive development of the lipolytic flora which has an irritating effect on the skin, the same as infections caused by the *Demodex folliculorum* parasite found in the pilosebaceous follicle.

Some digestive distraught through its toxic intestinal products can create an accentuated vasodilation at the facial level. Gastric infection with *Helicobacter pylori* is a known theory based on the fact that disease treatment can induce the apparition of rosacea. Other known factors in disease apparition are physical in nature (cold, wind, UV radiation), alimentation factors (spices, very warm liquids, alcohol), endocrine factor (the disease can be seen in many women who've reached menopause), emotional factors.

Rosacea can be caused by systemic administered drugs like topical corticosteroids, medicinal cosmetic products. Even by vitamins B₂ and B₁₂ some specialists claim that the disease can be triggered. It is clear that the rosacea etiology issue is still a very discussed and researched subject.

Another important problem from theoretical and practical point of view is its evolution. From theoretical point of view rosacea has 3 evolutionary stages: Stage I of facial erythema or skin redness; Stage II or clinical manifested cuperosa through telangiectasia localized on the nose and cheeks, can be associated with erythema, manifested through a skin coloration with different shades from pink to purple-red. Stage III is papulopustular rosacea, clinically manifested through inflamed lesions like papules covered by flakiness on the nose, cheeks, and mid-frontal, between eyebrows and around the temples. In this stage inflamed nodules can appear, the skin can become thicker, the sebaceous glands become hypertrophic, especially on the nose. The eyes can become affected, especially the eyelids, an important sign for the diagnosis.

In clinical practice, the correct diagnosis of rosacea's stage is important in order to determine the correct therapy. For this the following stages are implemented: Stage I or erythema. It's important to mention the fact that in this stage are include people which have the erythema is preceded many years before by a pre-stage characterized by a transitory paroxysmal erythema. Stage II or cuperosa together with erythema. Stage III with erythema and papules. Stage IV with elephantiasis rinofima plus ocular affliction

MATERIAL AND METHOD

The purpose of this study was to point out some of the most frequently met etiological aspects of rosacea, as well as its staging within clinical practice within a defined patient lot.

This study was conducted on a lot of 25 patients with ages between 20 and 70 years old, over the course of 3 years, between 1st January 2014 and 30 September 2016, within a Private Dermatology Practice of a private Medical Center in Oradea.

The studied lot consisted of 3 men patients and 22 female patients. The positive diagnostic and the clinical evolution of the rosacea's stage was determined based on the anamnestic data, clinical dermatological examination, dermoscopy, paraclinical investigations and where necessary, with the help of interdisciplinary consult: internal, endocrinology.

The following parameters were evaluated: age, sex, environment of the patient rural/urban, profession, the history of the affliction, alimentation, toxic habits, sun exposure duration, any medical treatment in effect, presence of infections, the use of cosmetic products.

The clinical dermatological exam consisted of:

- Transitory erythema presence and persistent localized erythema presence at the facial level.
- The color of the erythema
- Presence of telangiectasia
- Presence of papule lesions, papula-pustular and flakiness, nodules, hypertrophy of sebaceous glands and the nose, affliction of eyelids and conjunctivitis.
- Lesion distribution at the face level and anatomic regions

The clinically evolutionary study of rosacea was determined based on clinical manifestations type:

- Stage I of erythema based on the diffused erythema presence on the nose, cheeks and then on the entire face
- Stage II of cuperosa characterized by erythema and telangiectasia
- Stage III of papula-pustular rosacea lesions present through erythema, flakiness, papula-pustular lesions on the nose, cheeks, and mid-frontal, between the eyebrows and in the temples region.
- Stage IV of rinofima characterized by sebaceous glands hypertrophy, nose redness and eye affliction.

This standardization is important in practice for administering the right therapy according to disease stage.

RESULTS AND DISSCUSIONS

The study was conducted on a number of 25 patients of both sexes and with different ages. Subject repartition based on age and sex can be seen in table 1.

Table 1

Rosacea case repartition based on age group and sex

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

The study points out the increased number of female patients, 22, compared with 3 male patients. The study results also show a larger percentage of patients which come from an urban environment, 60% meaning 15 patients, while 40% translating into 10 patients from the rural environment.

From etiological point of view, the study results show an increase of the etiological factors and even their association, based on all the clinical and para-clinical investigations. Therefore, 20% of the patients, all females, were found to have gastric infection with *Helicobacter pylori*, determined by the increased white cells count, and in 6 patients, also women, translating into 24%, we found biliary digestive afflictions. Arterial hypertension and diabetes was detected in 1 of the male patients, translating into 4%.

The presence of the endocrinal factor was detected in 5 patients, 20% of the patients having rosacea ignition during menopause.

The vascular factor was found to be incriminating in 4 of the patients, all women, and it was given by the transitory paroxysmal erythema which appeared many years before the apparition of rosacea unleashed by strong emotional circumstances, sun exposure, cold, wind, and very hot beverages.

Excessive alcohol usage, associated with sun exposure, excess of spice usage are the factors identified to have unleashed the etiology in 2 of the male patients.

Another 2 patients had prolonged sun exposure due to their agricultural area of activity. This was identified to be the ignition factor for the disease, associated with a poor alimentation and other environmental factors like wind and cold.

The study emphasizes that sun exposure leads to aggravating the existing symptom of the disease and it represented a well met factor in the clinical investigations of all the subjects, being associated with the other factors.

Rosacea's staging was determined based on the dermatological and clinical exam as well as dermoscopy. These studies show that 7 patients, 28% out of the overall pool of patients were found to be in stage I. 10 of the

patients, 70% were diagnosed with stage II, while 7 patients, another 28% were diagnosed with stage III. Only 1 patient was diagnosed with stage IV.

Disease incidence can be found in graph 1 and it can be seen that the peak of incidence was reached in 2015 even though the differences are almost insignificant when comparing the months in which the sun is at its strongest.

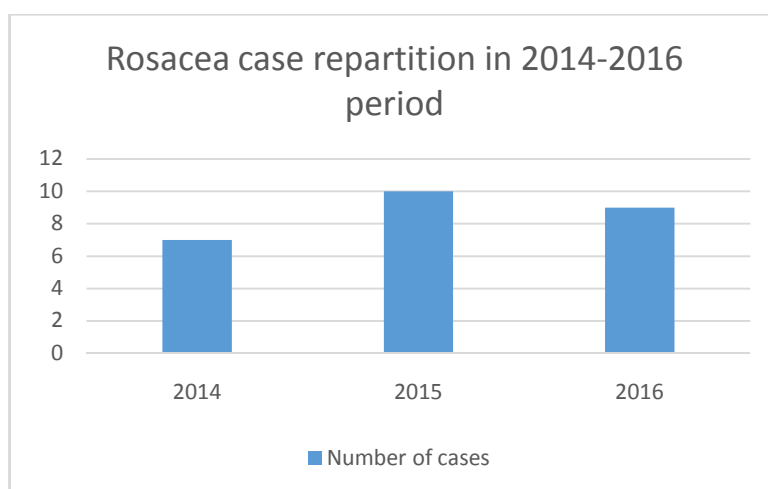


Fig. 1 Rosacea case

Rosacea is an affliction with a complex and varied etiology. The research conducted in the last period has underlined the importance of detecting the etiological factors and the causes which lead to disease apparition in order to obtain the right therapeutic results, to soften the symptoms, to stop the disease evolution and to obtain important withdrawals.

In addition to all these, we can add the importance of obtaining a strong positive psychic response from the patients because as research shows, a great deal of patients are feeling stigmatized by the disease, they limit their social contacts and isolate themselves from other people and even developing depressions.

By identifying the etiological factors through clinical and paraclinical investigations we were able to establish adequate treatments which were able to diminish the disease and stop its evolution.

Identification of the gastric infection through the determination of the antibodies related to *Helicobacter pylori* in some of the patients found in the study and administration of adequate treatment in association with the local

treatment has led to disease diminishing with positive clinical results in all the cases, an aspect backed up by literature data.

Medical treatment of digestive issues in association with the local treatment have led to good results by diminishing and even close to total healing of skin lesions.

Increased facial vascular reactivity triggered by various factors and confirmed by angiological research was diminished at only 50% of the patients. The results of this study point out the association of many factors in disease apparition. The most frequent associations are those between different infections and digestive issues together with sun exposure and facial vascular hyper-reactivity. The apparition of rosacea in women when reaching menopause, associated with prolonged sun exposure determines the disease aggravation. This study comes to underline the role of the sun in aggravating and accelerating rosacea, aspect identified in all the patients. Numerous studies made by different authors confirm and underline the importance of sun exposure in all patients and disease aggravation.

The increased incidence of aggravating scenarios in the warm seasons was observed at 87% of the patients, due to prolonged sun exposure; lack of solar protection and by not respecting the therapeutic indications. The exacerbation of rosacea was observed in 9 of the 10 patients from the rural environment because of their profession and their activity in open air.

In literature we can find numerous relevant studies concerning professions with activities conducted in open air, in which rosacea is a consequence of increased sun exposure.

Because of the varied clinical manifestation, correct appreciation of disease evolution and for adequate treatment implementation, in clinical practice exists a classification of rosacea divided in 4 stages. This aspect is unanimously accepted by specialists, each stage being characterized by certain local clinical manifestations in different areas of the face and which show at the same time the evolutionary stage of the disease.

The results obtained after our study point out that all included patients were found to be in one of the stages of the disease. In our study an important percentage of patients were recorded to have stages II and III of the disease, 36% in stage II and 32% in stage III; 28% in stage I and only one male patient in stage IV with riniform and ocular issues.

Few choose to use a different stage categorization, except Anglo-Saxons and American authors. They divide the rosacea in 4 under-types: subtype 1 represented by the Erythematoteleangiectatic rosacea ETTR; subtype 2 Papulopustular rosacea PPR; subtype 3 Phymatous rosacea PR in which they include the riniform and subtype 4 Ocular Rosacea OR, in which they include the ocular manifestations of rosacea.

Among our lot of patients we had a reduced number of male patients which underlines a larger preoccupation of women for their looks and for maintaining their health state. The study data shows a significantly increased addressability in women when it comes to health services compared to men, an aspect confirmed even by the statistical data of the public health system. From here we can draw the conclusion that there can be more cases of rosacea but they are not recorded because men don't tend to go to the medic as much as women.

CONCLUSIONS

1. Rosacea is a disease with numerous clinical manifestations, localized at the face level and with a varied and complex etiology;
2. The study underlines the importance of factors like the vascular, infectious, endocrine, emotional and most important, prolonged sun exposure.
3. Prolonged sun exposure is the most important factor of aggravating rosacea and is a factor identified in all patients within this study.
4. The study shows the presence of multiple etiological factors at the same patient;
5. The importance of categorizing the disease in stages from practical and clinically evolutionary perspective as well as for establishing the correct treatment depending which stage the patient is in;
6. The increased frequency of the disease in female patients, explained also through the increased addressability of women to the health services.

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