Rosacea: Clinical Study of 67 Cases

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Background : Rosacea is a chronic skin disease which primarily affects the face. There have been many basic and clinical studies on rosacea in the West, but little in Korea.

Objective : This study was to investigate clinical features of rosacea in Korea and to compare them with those in the West.

Methods : During a 20-month period, 67 patients diagnosed as having rosacea were examined for their clinical presentations by means of personal interview.

Results : Erythema and telangiectasia were found in almost all of the 67 patients. Comparing with the results in the West, flushing and telangiectasia were more common whereas papules, pustules, and rhinophyma were less common with no case of ocular complaints or migraine.

Conclusion : Because early detection and treatment is necessary to prevent the progression of rosacea, it is important to realize that rosacea is not uncommon in Korea and to recognize its somewhat different clinical manifestations from those in the West.
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Rosacea is a chronic skin disease which primarily affects the face. It frequently starts with frequent flushing and proceeds to erythema and telangiectasia, to papules and pustules, and finally, in a small proportion of patients, to rhinophyma[1-3]. The pathogenesis of rosacea is still unknown. It is thought to stem from a lability of the regulatory mechanisms of the blood vessels[2,4]. In addition, its increased prevalence in lighter-skinned races and the histologic findings of elastotic degeneration suggest a role of solar irradiation.

Whereas rosacea is a common skin disease in Caucasians, it is said to be less common in dark-skinned people[5]. There have been many basic and clinical studies on rosacea in the West[6-9], but little in Korea. The purpose of this study was to investigate the clinical features of rosacea in Korea and to compare them with those in the West.

MATERIALS AND METHODS

During a 20-month period, 67 patients among all 5,979 patients who initially visited our dermatologic clinic were diagnosed as having rosacea. Those individuals with a history of frequent flushing and all or some of the typical signs of rosacea(i.e., erythema, telangiectases, papules and/or pustules, and swelling) were defined as having rosacea. Careful personal history taking and physical examinations were done on each patient to obtain detailed clinical data. Data regarding age at pre-

sentation, symptoms, signs, associated conditions including history of frequent flushing and ocular symptoms, aggravating factors, and so on, were then analyzed.

Rosacea was divided into two groups: the erythematotelangiectatic(ET) type showing mainly redness and telangiectases on the face, and the papulopustular(PP) type with papules and pustules in addition to redness and telangiectases. At initial visit, the cardinal physical signs of rosacea, such as erythema, telangiectasia, papules, pustules, and edema, were graded as 0:absent; 1:mild; 2:moderate; 3:severe by one investigator in order to assess and compare the severity between women and men. We also compared the clinical features of our cases with those in the West to find out whether there are any clinical differences between the two groups. For statistical analysis, the chi-square tĕst was used to compare the clinical manifestations between the groups and the T-test to compare the sexual difference in the mean grading scores of five cardinal signs.

RESULTS

Of 67 rosacea patients(21 men and 46 women), 29(43%) had an ET rosacea and the remaining 38(57%) had the PP type. Demographic and clinical characteristics of patients are listed in Table 1. Forty-nine patients(73%) had history of frequent flushing prior to getting persistent erythema, so called prerosacea. The patients had had their skin complaints on average for 8.9 years(female: 7.8, male: 10.4). The age of presentation ranged 17 to 65 years and the peak decades for age at presentation were the third and the fourth(Fig. 1). There was a predominance of women with rosacea except in the fifth and sixth decades. Especially at the opposite

ends(i.e., in the less than 20-year age group and in the 60-year age group), there was no male patient.

Bilateral cheek involvement was the most common presentation and was present in 63 patients(94%). Nose involvement was more commonly seen in male patients(81 %) than in female ones(43 %). A bald scalp was involved in one male patient. Flushing was the most common symptom in both sexes and was present in 54 patients(81%). Burning, itching, and stinging were present in 30(45%), 22(33%), and 5 patients(7%), respectively. Burning sense was more common in women(Table 2).

The most common sign of rosacea was erythema, seen in the entire patient. Telangiectasia was found in 64 patients(96%). Papules and pustules were recorded in 36 and 9 patients, respectively. Lymphedema was shown in 20 patients(30%). Rhinophyma occurred in only 2 patients. None of the patients complained of ocular symptoms or migraine(Table 3). Fig. 2 shows the mean grading scores of cardinal signs of rosacea. In general, male patients showed higher grading scores in all items

Fig. 1. Age and sex distribution at presentation for 67 patients with rosacea.

Table 1. Characteristics of the 67 patients with either the erythematotelangiectatic(ET) or the papulopustular(PP) type of rosacea

	ET		PP		Total
	Male	Female	Male	Female	
Number of patients	7	22	14	24	67
Age(mean, years)	38.4	35.4	42.1	31.5	35.7
Duration(mean, years)	16	8.5	7.7	7.3	8.9
Number of patients with history of prerosacea	5	19	8	17	49

than female ones, but only erythema was statistically significant($p < 0.05$).

Various parameters are compared also in Table 3 for the rosacea patients in Korea and in England. Flushing and telangiectasia were relatively more common, whereas papules, pustules, and rhinophyma were less common in Korean patients($p < 0.05$). Especially, none of the Korean patients showed ocular complaints and migraine, which occurred in 35% and 54%, respectively in English patients. No difference could be discerned between the two countries regarding erythema, lymphedema, and the use of topical corticosteroids.

DISCUSSION

Even though rosacea is a very common affection especially in fair-skinned people, studies for its true prevalence are very rare. Berg and Lidén[10] reported that rosacea was found in as much as 10% of the general population and this was the only study in which investigators systematically examined the facial skin of people in a community-based nonmedical setting. Actually Kligman estimated the prevalence to be at least 30% on the basis of the following criteria: 1) frequent episodes of flushing with persistent erythema, 2) papulopustules, and 3) telangiectasia[11]. In our study, about 1% of all patients who visited our department were diagnosed as suffering from rosacea, and this was con

sistent with the result of previous study in Korea[12]. Considering that not all the patients with mild rosacea seek medical care for treatment of merely emotional flushing, the real prevalence of rosacea in Korea must be much higher than usual estimation. Prevalence rate depends of course on the examiner's classification, because rosacea is not a distinct entity. Although female patients outnumbered male ones by 2.2 to 1, male patients showed longer duration of disease, older age of onset, and higher grading score, which means men have a more severe form of rosacea.
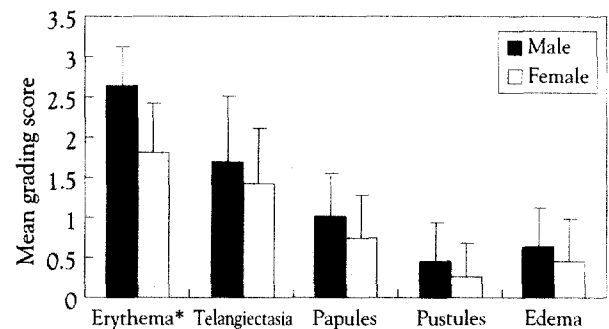

Fig. 2. Clinical scores in 67 patients with rosacea at presentation (mean ± SD, *$p < 0.05$).

Table 3. Clinical findings in patients with rosacea in England and Korea

Parameter	No. of patients(%)	
	England[†] (n=108)	Korea (n=67)
Flushing*	45(42)	54(81)
Erythema	105(97)	67(100)
Telangiectasia*	54(50)	64(96)
Papules*	90(83)	36(52)
Pustules*	72(67)	9(13)
Lymphedema	26(24)	20(30)
Rhinophyma*	15(14)	2(3)
Ocular complaints*	38(35)	0(0)
Migraine*	58(54)	0(0)
Use of topical steroid	32(30)	28(42)

† Data from Sibenge S, Gawkrodger DJ. Rosacea: A study of clinical patterns, blood flow, and the role of *Demodex folliculorum*. *J Am Acad Dermatol* 1992;26:590-3

Symbol(*) indicates the parameter is statistically significant($p < 0.05$).

Table 2. Distribution of lesion and symptoms in 67 patients with rosacea

	No. of patients(%)		
	Male (n=21)	Female (n=46)	Total (n=67)
Location of lesion			
Cheeks	19(90)	44(96)	63(94)
Nose	17(81)	20(43)	37(55)
Chin	14(67)	19(41)	33(49)
Forehead	11(52)	15(33)	26(39)
Bald area	1(5)	0(0)	1(1.5)
Symptoms			
Flushing	16(76)	38(83)	54(81)
Burning	6(29)	24(52)	30(45)
Itching	7(33)	15(33)	22(33)
Stinging	2(9)	3(6)	5(7)

Rosen and Stone suggested several possibilities explaining why rosacea should be less common in dark-skinned people[5], which would also be true to Koreans. Because both erythema and telangiectasia are more difficult to appreciate in dark skin, prompting fewer visits to physicians by affected dark-skinned patients. Therefore, early or mild cases of rosacea in dark-skinned patients may go undiagnosed or unreported, resulting in a somewhat erroneous impression of decreased incidence of the disease. Certainly, if actinic damage is at all an important factor in the pathogenesis, dark-skinned people would be expected to be less susceptible. It may also be that the genetic profile necessary for rosacea is very rare within dark-skinned people.

Comparing the clinical features in our cases with those in the West, we were able to find out some different characteristics. First, none of our patients developed any ocular complaints or migraine. This is surprising because the prevalence of ocular involvement and migraine in patients with rosacea has been reported to be up to about 60%[13,14] and 44%[15], respectively. In addition, it may be an underestimate because the dermatologist often fails to inquire about these symptoms or to inspect the lids for signs of ocular rosacea. As for ocular rosacea, the most common symptoms are dryness and itching, and erythema and telangiectasia of the eyelids are frequent findings[16]. The probable explanations for this difference we can offer are that the individuals in our rosacea patients had less severe disease than of the patients in the West, or that the figures for the frequency of eye complaints and migraine mentioned in the literature are too high. As a matter of fact, Berg and Lidén reported that rosacea sufferers had the same frequency of eye complaints as did the comparison group[10]. Erythema appeared in almost all of the patients in both groups, but flushing and telangiectasia were more common in our cases. On the contrary, papules, pustules, and rhinophyma were less common. This finding means that less proportion of people with the erythematotelangiectatic rosacea in Korea goes on to develop papules and pustules, namely the papulopustular rosacea.

There is no doubt that actinic damage is one of the major factors to provoke rosacea[17]. Solar elastotic change increased in rosacea. It is suggested that loss of integrity of upper dermal connective tissue may permit vascular dilatation and that this may play an important role in the pathogenesis of the disease[18]. Therefore, we guess that these differences are due to the less solar-induced degeneration of connective tissue, which thanks to more pigmentation in Koreans than in Caucasians.

Rosacea is a treatable disorder. Avoiding flushing and anything that can cause stinging of facial skin can be sufficient in some patients to sustain remissions[12]. In this regard, a laudable goal is the recognition of patients with prerosacea. Avoidance of facial skin irritants and controlling flushing reactions may prevent the development or slow the progression of rosacea stigmata in such patients. The inflammatory lesions of rosacea, the papules and pustules, and occasionally nodules and plaques, are easily treated in most patients, unless they appear superimposed or rhinophyma and other phymatous changes of the skin. Antibiotic therapy is most effective against inflammatory papules and pustules. Tetracycline, in doses ranging from 250mg to 1,000mg a day, is widely used. Other antibiotics used for the treatment of rosacea include erythromycin, minocycline, doxycycline, and metronidazole. We prefer doxycycline to tetracycline, because the former has better compliance than the latter in spite of its higher cost.

Although rosacea in Korea is not so common as that in the West, we think its real prevalence has been underestimated, which is due, in some part, to its different clinical features, such as more common manifestation of ET type in Korea. As rosacea may get worse over time if it is not treated, early detection and treatment is important in order to prevent progression of rosacea. In Korea, however, even dermatologists frequently overlook or don't recognize the rosacea patients, if they have just mild symptoms and signs such as only frequent flushing or erythema and don't complain of them to dermatologists. It is, therefore, important to realize that rosacea is not uncommon any more in Korea and that careful history taking and physical examination are of great value as an initial step for recognizing rosacea patients in Korea.

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