

PATTERN OF SKIN DISEASES IN THE ELDERLY SEEN AT THE NATIONAL SKIN CENTRE (SINGAPORE) 1990

K B Yap, M G Siew, C L Goh

ABSTRACT

A retrospective study was conducted at the National Skin Centre (Singapore) for the period 1st January 1990 to 31st December 1990 to determine the pattern of skin disorders in the elderly. A total of 2,571 patients aged 65 years and above were studied. This constituted 6.4% (2,571/39,941) of patients seen at the Centre for that year. 38.1% of the elderly patients were aged 75 years or older. The male to female ratio was 1.3 to 1. There were differences in the pattern of skin problems when compared with the young. Xerosis and asteatotic eczema were distinctly common in the elderly. The most common dermatosis in the elderly was eczema. Endogenous eczema (including seborrhoeic dermatitis, lichen simplex chronicus, hand/feet eczema, stasis eczema, generalised exfoliative dermatitis), exogenous eczema (ie contact dermatitis) and dermatitis (not otherwise specified) formed 35.3% (907/2,571) of the skin disorders encountered at the National Skin Centre. Eczema, fungal, viral infections and psoriasis were on the whole less common in the elderly compared with the general population. Common skin infestations and infections were scabies, viral warts, monilial and bacterial intertrigo, and tinea corporis. Urticaria, alopecia, insect bite reactions and post-inflammatory pigmentation were uncommon referral problems in the elderly.

Keywords: epidemiology, skin disorders, elderly, geriatric dermatology

SINGAPORE MED J 1994; Vol 35: 147-150

INTRODUCTION

The National Skin Centre (NSC) remains the only government referral dermatological centre in Singapore since it started operation in December 1988. The patients seen at the Centre consisted of referral cases from the government outpatient clinics, general practitioners, government, restructured hospitals and self-referred patients.

Previous published studies have examined the trend of skin problems in the local population as a whole with lesser emphasis on the elderly. A retrospective study was conducted at the National Skin Centre to examine the type of skin diseases seen among the elderly over a period of one year. Findings from this study will help us to plan future clinical services, educational programmes and health manpower needs to manage elderly patients with skin diseases.

METHODOLOGY

1. The diagnosis coding for each patient attending NSC has been computerised since 1989. All patients with a new skin problem would be assessed by a trained dermatologist during his or her initial visit to the Centre. Diagnosis was made on clinical grounds and with the aid of laboratory investigations (including histology), where indicated.
2. Diagnosis for each skin condition was coded according to the International Classification of Diseases, WHO (ICD9

system)⁽¹⁾. The diagnosis of each attending patient aged 65 years and above (defined as elderly) was retrieved from computer records for the year 1990 for analysis. Repeat attendances by the same patient during the year of study was considered as a single record.

3. A further comparison was made by dividing the study population into "old" (age less than 75 years) and "older" (age 75 years and above). A z-test was performed for the two sub-population proportions to determine if there was significant statistical difference in the pattern of cases seen. The results are shown in Table I.

Table I – Prevalence of the 23 most common diagnoses according to age group (per 1,000 patients)

Disease	65-75 yrs (n = 1,592)	>75 yrs (n = 980)	No.	p value
Endogenous eczema (*NOS)	76.7	95.0	215	~ ns
Dermatitis	55.9	85.7	173	<0.05
Xerosis	48.4	76.5	152	<0.05
Contact dermatitis	52.8	52.0	135	ns
Seborrhoeic dermatitis	46.5	56.1	129	ns
Lichen simplex chronicus	47.1	33.7	108	ns
Seborrhoeic keratosis	41.5	40.8	106	ns
Psoriasis	40.9	14.3	79	<0.001
Hand/feet eczema	33.9	20.4	74	ns
Scabies	13.8	38.8	60	<0.001
Viral warts	24.5	15.3	54	ns
Intertrigo	22.0	15.3	50	ns
Tinea corporis	14.5	18.4	41	ns
Generalised exfoliative dermatitis	13.2	19.4	40	ns
Pruritis	17.0	12.2	39	ns
Herpes zoster	12.6	14.3	34	ns
Stasis eczema	10.1	17.3	33	ns
Ulcers (lower limb)	10.1	12.2	28	ns
Post inflammatory pigmentation	10.7	11.2	28	ns
Tinea pedis	13.8	4.1	26	<0.05
Callosities	11.3	6.1	24	ns
Lichen amyloidosis	3.8	16.3	22	<0.05
Prurigo nodules	9.4	6.1	21	ns
		Total	1,671	(65%)

* NOS : not otherwise specified, ~ ns : not significant

Department of Geriatric Medicine
Tan Tock Seng Hospital
345 Jalan Tan Tock Seng
Singapore 1130

K B Yap, MRCP (UK), M Med (Int Med)
Registrar

National Skin Centre
1 Mandalay Road
Singapore 1130

M G Siew, MBBS
Medical Officer

C L Goh, MRCP (UK), M Med (Int Med), FAMS
Associate Professor and Medical Director

Correspondence to: A/Prof C L Goh

- A comparison was also made with an earlier study reported by Chua-Ty et al, for the period 1989-90⁽²⁾, in which 74,589 new attendances at the NSC were analysed. Z-test was done to determine whether there was any statistical difference in the major diagnosis categories between the two population proportions. The results are shown in Table II.
- The patients' case records in each of the major diagnosis group were also studied individually to look for distinctive characteristics.

Table II – Comparison of prevalence rates of common skin diseases between present study and study by Chua-Ty et al

	Present study (%)	Chua-Ty (%)	p value
Eczema	35.3	38.8	< 0.001
Fungal infections	4.5	5.4	< 0.001
Viral infections	3.4	9.4	<0.001
Psoriasis	3.1	3.3	<0.001

Size of present study = 2,571 patients
Size of Chua-Ty's study = 74,589 patients

RESULTS

A total of 2,571 elderly patients were seen, with a male to female ratio of 1.3 to 1. This constituted 6.4% (2,571/39,941) of the total attendances at NSC for the year 1990. 38.1% (980 patients) of the elderly patients were aged 75 years or older.

The prevalence rates of 23 most common diagnoses according to age are shown in Table I. Endogenous eczema was the most common diagnosis (215 patients, 8.4%); followed by dermatitis, not otherwise specified (173 patients, 6.7%); xerosis (152 patients, 5.9%); contact dermatitis (135 patients, 5.3%) and seborrhoeic dermatitis (129 patients, 5.0%).

Of the 23 most common diagnoses, dermatitis (not otherwise specified), xerosis, scabies and lichen amyloidosis were more common in the age group "75 years and above" compared with those less than 75 years of age. Psoriasis and tinea pedis appeared less common.

Endogenous eczema (not otherwise specified)

Two hundred and fifteen patients were seen out of which 208 records were studied. Patients with this diagnosis had the morphological features of eczema and no obvious exogenous cause. Systematic examination of the case records revealed that 39.8% of these patients had asteatotic eczema.

Dermatitis (not otherwise specified)

This category consisted of patients with dermatitis whose diagnosis was not specified further at the time of coding. Further examination of the case records revealed that 41.1% had an endogenous form of eczema (two-thirds of which was asteatotic eczema), 2.3% had exogenous eczema while the remainder was unclassified.

Contact dermatitis

Of the 135 cases, 44.4% were diagnosed as irritant contact dermatitis, 14.8% as allergic contact dermatitis and the remainder as contact dermatitis. Dermatitis medicamentosa from self-medication due to various Chinese medications (medicated oils, balms, paste) was common. Other irritants used included antiseptics and medicated soaps. In many cases of suspected allergic contact dermatitis it was not possible to do patch testing either because the patient found it inconvenient or it was difficult to determine the exact constituents of the medicaments. The racial distribution was Chinese (83.7%), Indians (8.1%), Malays

(5.2%) and others (3.0%).

Scabies

Sixty patients (2.3%) had scabies. There was one additional patient who had Norwegian scabies. The duration of symptoms before seeking treatment varied from one to several weeks. The longest duration was 2 years and this occurred in a vagrant. From the history, the sources of infection were hospital (6), nursing home (10), own homes (31), government institution (1), unknown (12). Skin scraping for the mite was done in 38 patients and was positive in 17 patients (44.7%). The choice of treatment varied among the dermatologists. Benzyl benzoate (EBB) and malathion (Derbac[®]) were equally popular choices. A total of 34 patients were treated with EBB and of the 20 who returned for review, only 2 needed additional treatment with malathion.

Pruritis

Records of 42 out of 44 patients with generalised pruritis were studied. Pruritis without rash was a difficult entity to manage. The duration of pruritis was very varied – from as short as 2 weeks to as long as 20 years. Asteatotic eczema was diagnosed in 31.0% of patients. An underlying cause for the pruritis was only evident in a few patients. Two patients had chronic renal failure, one had evidence of cholestatic liver disease and four were diabetics. One patient eventually developed bullous pemphigoid on the follow-up visit.

Generalised exfoliative dermatitis

Thirty-five out of 40 case records were available for study. The age range of patients was 67 years to 88 years with a mean of 75.7 years. The underlying causes were seborrhoeic dermatitis (11), asteatotic eczema (4), drug-induced (4), psoriasis (3), endogenous (3), photodermatitis (1) and unknown (8). Ten patients (28.6%) had more than one episode of erythroderma. The most consistent biochemical abnormality was a decreased total protein and albumin level in the liver function test. There was no fatality in this group of patients.

Skin malignancies

Some of the patients refused skin biopsies or excision. Of 17 biopsy-proven cases, 6 had Bowen's disease, 8 had basal cell carcinoma and 3 had squamous cell carcinoma. There were no cases of melanoma.

Hands and feet eczema

Fifty-eight out of 73 case records were studied. The age range of patients was 66 years to 89 years with a mean of 73.2 years. The majority (63.8%) of patients had the problem for less than a year. The longest duration was 20 years.

Skin infections

The common skin infections were viral warts, tinea corporis, tinea versicolor, herpes zoster, intertrigo (Candida or bacterial) and tinea pedis. The dermatomal distribution of skin lesions in the 34 patients with herpes zoster were: trigeminal (17.6%), cervical (23.5%), thoracic (44.1%), lumbar (8.8%), and sacral (5.9%). There were 5 cases (14.7%) with post-herpetic neuralgia. Two patients developed complications: one patient had gastric erosions after being on mefenamic acid for post-herpetic neuralgia while the other developed diabetic ketoacidosis because of secondary cellulitis.

Psoriasis

Although a total of 79 cases were seen, the case records of only 69 patients were available for study. Fifty-four of the patients were on follow-up while 15 (21.7%) were new attendances. Of the 15 new cases, the age range was from 66 years to 80 years with a mean of 70.7 years. A total of 10 out of the 69 (14.5%) patients had treatment with methotrexate because of extensive disease.

Only 2 (2.9%) patients had evidence of psoriatic arthropathy.

DISCUSSION

With the ageing of the Singapore population, it would become increasingly important to note the pattern of skin diseases in the elderly. From the therapeutic point of view, this information would be useful particularly to primary health care givers as it is likely that they would be the first to give advice regarding skin problems to elderly patients. Although this study is limited by the fact that most of the patients seen were referral cases, the information derived is still useful since no large scale community skin survey has been carried out locally and the number of patients seen at the National Skin Centre (NSC) is fairly large.

From this study, the most common dermatosis in the elderly was eczema. Endogenous eczema (including seborrhoeic dermatitis, lichen simplex chronicus, hand/feet eczema, stasis eczema, generalised exfoliative dermatitis), exogenous eczema (contact dermatitis) and dermatitis (not otherwise specified) formed 35.3% (907/2,571) of the skin disorders encountered at NSC.

In an earlier study done by Chua-Ty et al⁽²⁾ for the period 1989-90, in which 74,589 new attendances at NSC were analysed, the top 5 skin problems were eczema (38.8%), acne (10.9%), fungal infections (5.4%), viral infections including warts (9.4%), and urticaria (4.7%). Eczema, fungal infections and viral infections were all less common in our study of the elderly compared with general population studied by Chua-Ty et al. It is likely that elderly patients tend to seek treatment less readily thus accounting for the lower prevalence of eczema, fungal and viral infections. Also, viral skin infections such as measles, chickenpox, molluscum contagiosum were hardly present in the elderly. Urticaria was uncommon and acne almost never occurred in the elderly population. Alopecia, insect bite reactions and post-inflammatory pigmentation were uncommon complaints in the elderly. On the other hand, xerosis and seborrhoeic keratosis were two very common diagnoses in the elderly.

It is not surprising that the third most common diagnosis made was xerosis. Dryness or roughness of the skin is very common in the elderly⁽³⁾. Asteatotic eczema was also a common diagnosis made and reflected a more severe form of dryness with superimposed inflammation. Xerosis was often made worse by frequent washing and the use of harsh soaps.

It is interesting to note that contact dermatitis was the fourth most common skin disorder seen with irritant contact dermatitis being more common. Although experimental studies show that the elderly are not inherently more susceptible to externally applied irritants⁽⁴⁾ this form of eczema is quite commonly encountered in clinical practice. Older patients tend to ascribe minor skin ailments to lack of cleanliness than other age groups and as a consequence would frequently resort to cleansing with highly irritant antiseptics and disinfectants⁽⁵⁾. In the local context, the easy availability of various medicated oils and lotions add to the repertoire of irritants used. Health education will definitely play a significant role in reducing this group of skin disorders. As a race, Malays were under-represented in this dermatosis. Perhaps this is due to cultural differences in the use of topical agents.

Seborrhoeic dermatitis was a common form of endogenous eczema seen in the elderly and is easily recognised by its characteristic clinical pattern of erythema and scaling in areas with abundant sebaceous glands. Not so readily appreciated by the non-dermatologists is the fact that seborrhoeic dermatitis in the elderly sometimes present with a flexural pattern with the eczema appearing as a symmetrical glazed erythema of the body folds (eg axilla, groin, infra-mammary areas)⁽⁶⁾. The aetiology remains unknown and patients tend to run a chronic relapsing

course.

Lichen simplex chronicus or neurodermatitis was a difficult problem to manage especially when constant scratching led to perpetuation of the itch-scratch cycle. It is often not possible to identify the triggering event but the condition tends to affect certain classical sites, including the shins, ankles, forearms, palms of the hands and the back of the neck⁽⁷⁾.

Seborrhoeic keratosis was the commonest benign skin tumour seen in the elderly. It is common for the lesion to be multiple in the elderly with the face and upper trunk being the most commonly affected sites. The colour of the lesion may vary from lesion to lesion. Less appreciated by the referring doctors is the fact that the surface of the lesion may be raised and verrucous resulting in it being confused with a viral wart⁽⁸⁾. Occasionally, some lesions may itch and repeated irritation by the patient may render them red and inflamed⁽⁹⁾.

Psoriasis is a lifelong, chronic disease characterised by exacerbations and remissions. The prevalence of psoriasis in the elderly (3.1%) was less than that in the general population (3.3%). 78.3% of the patients seen were on long term follow-up. 21.7% were new cases and the oldest patient seen was aged 80 years. 14.5% required methotrexate at some point in their disease because of failure of response to topical therapy. Psoriatic arthropathy was only found in 2.9% of patients and appears to be much less than the commonly quoted figure of 10%⁽¹⁰⁾. Psoriasis was also a condition that was less commonly seen in the very old. The reason is unclear.

Grouped together as a whole, skin infections including scabies, viral warts, intertrigo, tinea corporis, herpes zoster and tinea pedis formed the largest group of skin problems seen in the elderly. As most of these skin conditions are readily treatable, it remains important that they are recognised early to reduce the discomfort suffered by the patients. Even the harmless looking plantar wart may pose a problem in mobility for the elderly because of the pain it causes on walking.

Scabies was the commonest skin infestation seen. Scabies is an often misdiagnosed condition in the elderly, usually because the diagnosis is considered unlikely, or is not considered at all. The presentation is often atypical with most elderly patients presenting with generalised pruritis but having minimal papular lesions⁽¹¹⁾. From the clinical history obtained, it appeared that more than half of the patients contacted their scabies from contact with someone in their own homes. Scraping for the mite was successful in 44.7% of cases and the scabicide benzyl benzoate still remained an effective topical agent in the cases treated.

In a previous local study on 108 patients with generalised exfoliative dermatitis⁽¹²⁾, a male : female sex ratio of 2.7:1 was noted with an average age of 61.5 years. The main aetiological groups were eczema, psoriasis, drug reactions, and those with unknown causes. This pattern was also noted in our present study. No mortality was noted in this category of patients.

CONCLUSION

Distinct differences exist in the pattern of skin disorders seen in the elderly compared with the general population. Eczema, fungal, viral infections and psoriasis were on the whole less common in the elderly. Xerosis and seborrhoeic keratosis were very common skin problems in the elderly. Urticaria, alopecia, insect bite reactions and post-inflammatory pigmentation were uncommon referral problems in the elderly.

The most common form of endogenous eczema in the elderly were asteatotic eczema and seborrhoeic dermatitis. Irritant contact dermatitis was the most common form of exogenous eczema. Health education of the elderly public regarding avoidance of self-medication and the proper use of topical medicaments,

antiseptics and disinfectants would help to reduce incidence of contact dermatitis. Similarly, the use of appropriate emollients and avoidance of topical irritants would lessen the problems of xerosis and asteatotic eczema seen in the elderly.

Skin infections formed the largest group of skin problems seen in the elderly. Skin infestation due to scabies was the 10th most common dermatosis. This was closely followed by viral warts, intertrigo and tinea corporis. Many of these conditions were readily treatable at the level of the primary care physician and need not have been referred to the dermatologist for management. Many of the infections were also contributed by neglect, poor personal hygiene and possibly overcrowding. Instructions on self-care and hygiene would be very useful in the elderly to reduce this problem. Training of medical staff to do regular screening of patients in nursing homes and institutions for skin infections would also help.

Most of the skin disorders in the elderly which make up two-thirds of the referral cases can be easily handled by the primary care physician. With the ageing of the Singapore population, it is important that the primary care doctor be equipped to handle the skin problems in the elderly. This can take the form of refresher courses for government outpatient clinic doctors before the start of each new posting, regular seminars for general practitioners and the incorporation of geriatric dermatology into the teaching programme for family medicine trainees. Medical students should also be exposed to the range of skin problems seen in the elderly in their undergraduate training.

ACKNOWLEDGEMENTS

The authors wish to thank Dr HP Chia, Senior Tutor, Department of Community, Family and Occupational Medicine, National University of Singapore for the help he rendered in the analysis of the statistics.

REFERENCES

1. World Health Organisation. International Classification of Diseases (ICD 9): Manual of the internal classification of disease, injuries, and causes of death. Vol 2. Geneva: WHO, 1978.
2. Chua-Ty G, Goh CL, Koh SL. Pattern of skin diseases at the National Skin Centre (Singapore) from 1989-1990. *Int J Dermatol* 1992; 31: 555-9.
3. Graham-Brown RAC, Monk BE. Pruritis and xerosis. In: Monk RE. ed. *Skin disorders in the elderly*. Oxford: Blackwell Scientific. 1988: 133-46.
4. Coenraads PJ, Bleumink E, Nater JP. Susceptibility to primary irritants, age dependence. *Contact Dermatitis* 1975: 377-81.
5. Monk BE, Graham-Brown RAC. Eczema. In: Monk RE. ed. *Skin disorders in the elderly*. Oxford: Blackwell Scientific. 1988: 147-57.
6. Plewig G. Seborrheic dermatitis. In: Fitzpatrick TB. ed. *Dermatology in General Medicine*. New York : McGraw-Hill Co. 1987: 978-81.
7. Burton JL. Eczema, lichenification, prurigo and erythroderma. In: Champion RH, Rook A, Wilkinson DS, Ebling FJG. eds. *Textbook of Dermatology*. Oxford: Blackwell Scientific. 1992: 578-9.
8. Marks L. Principles of dermatology. Philadelphia: WB Saunders Co, 1986: 60-1.
9. MacKie RM. Epidermal skin tumours. In: Champion RH, Rook A, Wilkinson DS, Ebling FJG. eds. *Textbook of Dermatology*. Oxford: Blackwell Scientific 1992: 1465-6.
10. Lynch PJ. *Dermatology for the house officer*. Baltimore: Williams & Wilkins 1987: 210-1.
11. Habib TB. *Clinical dermatology*. St Louis: CV Mosby Co, 1990: 375.
12. Wong KS, Wong SN, Tham SN, Giam YC. Generalised exfoliative dermatitis – a clinical study of 108 patients. *Ann Acad Med Singapore* 1988; 17: 520-3.



SHALOM REALTY PTE LTD

Real Estate Agency Sales & Leasing
Licence No. AD041-05267B
Member of Assn. of S'pore Realtors
2 Jurong East Street 21
#02-12 IMM Building
Singapore 2260
Off: 5669881 Fax: 5691088

WE DEAL WITH YOUR PROPERTIES AS IF THEY ARE OURS

At Shalom Realty Pte Ltd, we emphasize real concern for every one of our clients and with our years of experience, we offer you our service with a heart.

Whether it be Commercial or Residential properties, we are at your service.