

Elderly Hospitalised Patients—The Impact of Itch and its Prevalence

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Abstract

Introduction: Pruritus in elderly patients can have a significant impact on the quality of life but may be underestimated and poorly addressed by healthcare professionals. **Materials and Methods:** From March to May 2010, a structured interview questionnaire including the Dermatology Life Quality Index (DLQI) was administered to all patients admitted to the geriatric ward in Changi General Hospital, Singapore, except for those with cognitive impairment. **Results:** A total of 194 patients were enrolled in the study; 94 patients (48.5%) were experiencing itch at the point of the interview; mean DLQI score for patients with itch was 6.7; 35.1% of patients experienced sleep disruption whilst 30.9% reported impairment of concentration levels as a consequence of their itch. Of the patients who had informed their doctor about the problem, 73.7% felt that doctors had not adequately addressed the cause of the itch. Among patients who reported itch, the DLQI score correlates with the severity of pruritus with a regression coefficient of 0.2737 ($P < 0.001$); 9.6% of patients with itch were independent with their activities of daily living compared to 21% of patients who did not experience itch. **Conclusion:** Almost half of the subjects in our study experienced itch and a third of them reported impairment of quality of life. Patients who were independent of their activities of daily living were also less likely to experience itch. This study highlights the importance of increasing awareness of pruritus among physicians as pruritus can have adverse consequences on patients' quality of life when left unaddressed.

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Introduction

Pruritus, or itching, is an uncomfortable sensation often leading to the urge to scratch. Although it is the commonest symptom in patients presenting to dermatologists, pruritus may or may not be associated with an underlying skin condition. It can lead to adverse consequences on patients' quality of life, including disruption of normal sleep patterns and poor day time concentration, essential for daily activities. A study by Beauregard and Gilchrist showed that 83% of octogenarians reported concerns about their skin, with pruritus being the most common complaint.¹ Another study showed that elderly patients had a 3-fold increased

risk of pruritus due to the higher prevalence of common skin conditions such as dermatitis, fungal infections, benign tumours and viral infections.² Itch may also be contributed by coexisting illnesses e.g. renal impairment, hypothyroidism, iron deficiency and liver impairment, as well as their medications. Studies have shown that pruritus correlates with anxiety in patients with conditions such as atopic dermatitis, burns and psoriasis.³⁻⁵

The aim of this study is to ascertain the prevalence, perceived severity and impact of itch on the quality of life in an elderly inpatient population in a general hospital in Singapore.

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Materials and Methods

Study Population and Patient Recruitment

We conducted a hospital-based, cross-sectional observational study over a period of 3 months from March to May 2010. The study was approved by the Domain Specific Review Board. All patients aged 75 years and above who were admitted to the geriatric wards of Changi General Hospital, Singapore were invited to participate in the study. These patients were admitted for various medical problems, which may not have been related to their itch or skin condition. Verbal consent was obtained from patients. Patients who had a history of cognitive impairment were excluded from the study. All patients enrolled were interviewed using a structured questionnaire, which included a Dermatology Life Quality Index (DLQI) survey.

Questionnaire and Dermatology Life Quality Index (DLQI) Survey

Information obtained included the presence and duration of itch. For patients with itch, the severity was graded by the patient on a scale of 1 to 10, with 1 being very mild and 10 being very severe. This was based on the current severity of pruritus on the day of the interview. The impact of itch on the patient's lifestyle was also graded on a scale of 1 to 10, with 1 being "not bothered" to 10 being "most bothered". The impact of itch on sleep disruption, concentration levels and social interaction was also recorded. Patients were also asked if they had prior discussion about their itch problem with a medical professional, and if they did, whether they had informed their primary care physician, geriatrician or other specialist. For patients who had informed their doctors about the problem, they were asked if they felt their doctor had adequately addressed the cause for the itch and what treatments were prescribed. The use of systemic and topical over-the-counter medications, and traditional medications, were also documented. In particular, we queried about the use of moisturisers, medicated oils, "snake-powder" (commonly available traditional powder containing sulphur), cold or hot water and/or ice. Patients were also asked whether they had a history or current skin diseases and if they felt that they had a problem with dry skin. The patients' social background was ascertained, specifically to determine the patients' living arrangements (i.e. living alone, with or without a caregiver, or if they were living in a nursing home). Finally, the patients were asked if they would prefer a dermatologist to assess and treat their itch.

All patients who experienced itch were assessed on the impact of pruritus on their quality of life with the DLQI. The DLQI consists of 10 questions covering 6 different aspects of day-to-day living: symptoms and feelings (2 questions), daily activities (2 questions), leisure (2 questions), work or

studying (1 question), personal relationships (2 questions) and treatment (1 question). Each question is graded on a score of 0 to 3 and the total score was calculated by adding the score of each question. The minimum score is 0 and the maximum score is 30. The higher the score, the more a patient's quality of life was adversely affected. As Singapore has a few common languages, patients were asked the DLQI questions through an interpreter if English was not the patients' first language and if the interviewer was not fluent in the patients' first language.

Data and Statistical Analysis

Statistical analysis was done using SPSS software (version 18.0; SPSS Inc, Chicago, IL). Continuous variables were presented as mean $\pm$ standard deviation or median (interquartile range). Categorical variables were expressed as percentages. The nominal qualitative variables were compared using the chi-squared test, or Fisher's exact test if the validity conditions of the chi-squared test were not met.

Results

Survey Population Characteristics (Table 1)

We enrolled a total of 194 patients, with a mean age of 85.4 years (range, 75 to 103 years) and a male to female ratio of 2:3. There was no significant difference between the mean age, gender ratio and ethnic distribution of patients with and without itch.

Characteristics of Patients with Itch

Ninety-four of the 194 patients (48.5%) reported itch. The mean duration of itching was 15.3 months (95% CI, 9.6 to 21.0 months), with a mean severity score of 3.9/10. Sleep disruption was reported in 35.1% (33/94), and 30.9% (29/94) reported difficulty concentrating on their daily

Table 1. Demographic Data Comparing Patients With and Without Itch

	With Itch (n = 94)	Without Itch (n = 100)	P Value
Age (years), mean (range)	85.4 (75 – 103)	84.6 (75 – 99)	0.3752
Gender, n (%)			
Male	41 (44.7%)	32 (32.0%)	0.1047
Female	53 (56.3%)	68 (68.0%)	0.1047
Ethnicity, n (%)			
Chinese	75 (79.8%)	85 (85.0%)	0.3524
Malay	14 (14.9%)	13 (13.0%)	0.8360
Indian	4 (4.3%)	2 (2.0%)	0.4332
Others	1 (1.1%)	0 (0.0%)	0.4845

activities due to the itch. The mean DLQI score for patients who reported itch was 6.7.

Of the patients with itch, 60.6% (57/94) of them had discussed the problem with at least one of their doctors, with the highest proportion informing their general practitioner (70.2%, 40/57), and a smaller proportion informing their geriatrician (22.8%, 13/57). One patient had informed both the general practitioner and geriatrician, and one patient informed a gastroenterologist as part of an outpatient hospital consult. Amongst the patients who had informed their doctor about the problem, 73.7% (42/57) felt that the doctor had not adequately addressed the cause of the itch. Of these patients, 20 were diagnosed with a specific dermatosis, with 13 patients with a history or current diagnosis of eczema, 4 patients with dematophyte infection, 1 patient with lichen simplex chronicus, 1 patient with background eczema as well as irritant contact dermatitis to medicated oils and 1 patient with postherpetic neuralgia.

Treatment for Itch

Of the 57 patients who had consulted their doctors about itch, 33 (57.9%) were prescribed with topical treatments only, 2 patients (3.5%) were prescribed oral antihistamines only, 19 patients (33.3%) were treated with a combination of topical treatments and oral antihistamines, and 3 (5.3%) were not prescribed any medications. Of the topical treatments prescribed, 42 were prescribed with moisturisers, most commonly aqueous cream and 10% urea cream, 26 were prescribed a topical corticosteroid, 8 with topical antifungals and 4 with 10% methylsalicylic acid cream. Of the patients prescribed oral antihistamines, 81% (17/21) were given sedating antihistamines e.g. hydroxyzine, whilst 19% (4/21) were treated with a non-sedating antihistamine.

Self-medication was common among patients with itch, with 17% (16/94) self-medicating with over-the-counter topical preparations, and a further 28.7% (27/94) using traditional medicated oils or powders.

Social Background and Caregiver Status (Table 2)

Patients without itch (21/100, 21%) were more likely to be independent with regard to activities of daily living as compared to patients who complained of itch (7/94, 9.6%) ($P = 0.024$). The majority of patients in this study resided with family members and only a small proportion of them were either staying alone or in a sheltered or nursing home. There was no statistically significant difference with regards to living arrangements between the group with itch and the group without itch. Those who required help with activities of daily living depended mostly on their children or domestic help.

Table 2. Characteristics of the Social Background and their Main Caregivers in the Itch and Non-itch Groups

	With Itch (n = 94) (%)	Without Itch (n = 100) (%)	P Value
Social background			
Living arrangement			
Staying alone	5 (5.3%)	4 (4%)	0.742
With other family members	55 (58.5%)	72 (72%)	0.051
With other family members and domestic helper	21 (22.3%)	17 (17%)	0.371
Domestic helper	1 (1.1%)	0 (0%)	0.485
Sheltered home	2 (2.1%)	0 (0%)	0.234
Nursing home	10 (10.6%)	7 (7%)	0.450
Main caregiver			
None	7 (7.4%)	21 (21%)	0.024
Family	53 (56.4%)	55 (55%)	0.886
Domestic helper	22 (23.4%)	17 (17%)	0.287
Sheltered home	2 (2.1%)	0 (0%)	0.234
Nursing home	10 (10.6%)	7 (7%)	0.450

Effect of Itch on DLQI Scores

Among patients who reported itch, the DLQI score correlates with the severity of pruritus with a regression coefficient of 0.2737 ($P < 0.001$).

Discussion

Itch may occur in the presence or absence of skin lesions. Acute pruritus lasts less than 6 weeks while chronic pruritus persists for longer than 6 weeks. The sensation of itch is mediated by the cutaneous afferent C-fibres in the skin. A study in mice has shown that reduction in the production of prostaglandin D2 may also lead to itch.⁶ Elderly patients are also at increased risk of pruritus due to xerosis.⁷

Our study shows that pruritus is a common symptom in the geriatric population. This may be attributed to common dermatological conditions such as eczema and tinea infection as shown in a study by Liao et al. However, this study was a retrospective analysis studying the prevalence of skin conditions amongst patients presenting to a university dermatology outpatient clinic. The prevalence of itch in our study population is similar to a study by Thaipissuttikul which showed that 41% of an elderly population in Thailand had pruritus.⁸ This study was however different from ours as patients were recruited from a dermatology clinic. In a large study in Turkey involving 4099 subjects who were either admitted or evaluated in clinic, the pattern of skin conditions observed were similar to our study

with a predominance of eczema, dermatophyte and viral infections.⁹ In a retrospective analysis of patients above 65 years of age admitted to a dermatology department in Eastern Turkey, eczema, fungal infections, urticaria and bacterial infections were the most commonly observed dermatological conditions. This study however included all-comers and did not specifically include elderly patients who presented with pruritus.¹⁰ The study by Beauregard and Gilchrist included a questionnaire although it was performed on non-institutionalised subjects. In their cohort of patients between 50 and 91 years, many subjects especially those above the age of 80 years were particularly less able to perform daily tasks including bathing, shampooing, and nail care. This may be the reason why our study showed that patients who were independent were less likely to have itch.¹

In our study, patients reported that their pruritus was not well addressed by their doctors. This may be because many of these patients do not manifest any specific skin lesions and doctors may lack the expertise and knowledge to treat pruritus. Primary physicians may also selectively focus on managing other comorbidities in these patients. Our study emphasises the need for primary care doctors and geriatricians, who regularly see elderly patients in their practices, to be mindful of the increased prevalence of itch and its effects on the quality of life in this population of patients. Early evaluation and treatment or onward referral to a dermatologist is important to reduce the psychosocial morbidity associated with severe itch in the elderly.

There were several limitations in our cross-sectional study. As our patients were enrolled from an inpatient geriatric ward in a general hospital, they may have represented a select group of elderly patients with more comorbid problems as compared to the general elderly population. The data collected is based on the patients' history and may be affected by recall bias.

Conclusion

In summary, our study demonstrates that pruritus is a common problem among the elderly. It can have considerable effect on patients' quality of life, in particular their ability to carry out their activities of daily living and also importantly affect their sleep.

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