

## Clinical profile of pruritus in elderly- a study from sub-Himalayan area

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### Abstract

Pruritus is a very common clinical entity in geriatric population .It poses not only a diagnostic clue but therapeutic challenge as well. The clinical examination of the skin hardly provides any clue to the etiology of the Pruritus. Detail history and a thorough examination is mandatory to reach a diagnosis. In geriatric population, often only secondary lesions like excoriation, lichenification and eczematous may be mistaken as primary lesions. Xerosis is sometimes coincidental only. This is important to search for Systemic causes if the cause of Pruritus remains unidentified. If the cause is not identified even after thorough work up, the diagnosis of Willan's itch merits consideration. It probably arises due to age-related changes of the skin and cutaneous nerves.

### Introduction

Amongst the dermatological conditions in geriatric population, pruritus qualifies as the most common skin disorder.<sup>(1)</sup> Pruritus is defined as an unpleasant cutaneous sensation that leads to a desire to scratch.<sup>(2)</sup> Itching that lasts less than 6 weeks is usually a protective phenomenon whereas an itch that remains for more than 6 weeks is mostly a nuisance.<sup>(3)</sup> A decline in the normal physiological functions of skin is partly responsible for the Pruritus.<sup>(4)</sup> It is because of this reason that the prevalence of pruritus increases with increasing age. In one of the studies regarding medical conditions, pruritus was considered as the most common medical condition. It was cited by almost two-third population as most frequent complaint and almost 83% of the octo-generians suffered from pruritus.<sup>(5,6)</sup> In another study conducted in Norway, itching was the predominant skin complaint in subjects ranging from 30 to 76 years of age.<sup>(7)</sup> While studying the quality of life with pruritus, it was found that a sizeable portion of the study subjects were depressed.<sup>(8)</sup>

Pathophysiologically, pruritus is mainly mediated by unmyelinated C-fibres.<sup>(9,10,11)</sup> These itch fibres enter the spinal cord via the dorsal horn and ascend the lateral spinothalamic tract. These neurons are tonically inhibited by conventional nociceptive spinal cord neurons. Tonic inhibition is released with administration of centrally acting opioids, thereby causing itch. This mechanism explains the antipruritic effect of naloxone, an opioid antagonist.<sup>(11)</sup> These fibres enter the somatosensory cortex after passing through

the internal capsule. The very perception of itch stimulates the adjoining motor cortex, initiating the urge to scratch.<sup>(1)</sup> Schmelz *et al.*, recently reported the existence of 'active itch fibers' through microneurographic recordings in a chronic pruritus patient.<sup>(13)</sup>

### Study Design

We conducted a retrospective study in the Dermatology outpatients department at Doon Medical College, Dehradun, between June 2015 to June 2016. The study population comprised of 110 subjects. They were subjected to detailed history that not only comprised of the onset and course of Pruritus but appearance of skin lesions, systemic diseases, allergies drug intake, contact with pets and family history. Both primary and secondary scratch lesions like linear one round excoriations and ulcerations, lichenification, hyper-or hypo-pigmentation etc. were included.

Skin biopsy was done to those lesions which were difficult to classify on the clinical grounds. Laboratory investigations viz. hemoglobin, serum liver function test, iron, ferritin, creatinine, uric acid, thyroid profile, stool for ova and parasites, Age-appropriate cancer screening, radiological investigations like chest x-ray and ultrasound abdomen to look for the lymph nodes were done when required. The patients were classified into two categories- those with primary dermatological disease and the other category having systemic disorder as the cause of pruritus. Data analysis was done by appropriate statistics.

## Results

**Table 1: Demographic profile of study population**

		<b>Group 1 (Dermato logical)</b>	<b>Group 2 (Systemic Disease)</b>
Number of patients, n (%)	110 (100%)	65	45
Sex, n (%)			
Male	54	30	24
Female	56	35	21
Age, years			
Range	60-94	60-94	60-94
Mean $\pm$ SD	73 $\pm$ 15	72 $\pm$ 12	81 $\pm$ 13
Age distribution, n (%)			
60–70 years	54	36	18
71–80 years	38	18	20
> 81 years	18	06	12
Duration of pruritus, months			
Range	1-36	1-36	1-34

## Results

A total of 110 patients were included in the study. Demographic profile of the study population is depicted in Table 1. Females outnumbered males (51%). The geriatrics patients had an age ranging from 60 years to 94; with almost 50% belonging to 6<sup>th</sup> decade. The number of patients belonging to 7<sup>th</sup> decade onwards was successively lower. Primary dermatological diseases were responsible for pruritus in majority (59%) of the patients. The etiological profile in these patients is depicted in Table 2. Xerosis was the most common reason (59%) found in this group, while dermatological malignancy was least common. Forty five patients out of 110 (41%) were having systemic diseases. Renal diseases, anemia and diabetes together constituted more than 50% of the population with systemic diseases (Table 3).

**Table 2: Etiological profile in primary dermatology diseases**

<i>Inflammatory disease (n = 54)</i>	
Xerosis	32
Atopic dermatitis	9
Urticaria	5
Lichen simplex chronicus	5
Psoriasis	1
Lichen planus	1
Nummular dermatitis	1
<i>Arthropod disease (n = 12)</i>	
Scabies and post-scabious dermatitis	9
Arthropod reaction	3
<i>Autoimmune disease (n = 7)</i>	
Bullous pemphigoid	4
Pemphigus vulgaris	2
Unclassified autoimmune disease	1

<i>Cutaneous lymphoma (n = 2)</i>	
T-cell lymphoma	1
B-cell lymphoma	1

**Table 3: Disease profile of systemic illness in generalized pruritus**

Anemia	10
Chronic renal failure	10
Diabetes Mellitus	9
Liver disease	7
malignancy	4
Drug induced	3
Hypothyroidism	2

## Discussion

This study was conducted to find the pattern of diseases presenting as pruritus.

Primary dermatological diseases were found to be associated with Pruritus more commonly than systemic diseases. In the primary dermatological diseases xerosis was most commonly found. This finding is consistent with the existing literature which reveals that xerosis and atopic dermatitis are the most common dermatological diseases causing Pruritus in elderly.<sup>(4,14)</sup> Fenske et al. similarly found the dry skin is the most important cause of Pruritus in geriatric population.<sup>(4)</sup> Also study conducted by Thaiputtikul found the senile pruritus as the most frequent reason (41%) for generalized pruritus in geriatric population.<sup>(15)</sup> Systemic diseases were less commonly associated with Pruritus (40%). Majority of the geriatric patients were in the age range of 60-70 years (49%). This proportion is significantly higher than a study done by Kantor & Lookingbill, who found a systemic disease in correlation to pruritus in 13% of patients only.<sup>(16)</sup> They also observed that, as the age advances the prevalence

of systemic diseases increased from 33% in the age group of 60-70 years to 66% in more than 81 years. This finding is evident in the current study as well.

Amongst the systemic causes, majority had anemia and renal disease as the most important pruritogenic etiology, followed by diabetes. However hypothyroidism had the least potential to cause pruritus. These findings go hand in hand with other studies. Most of these conditions are associated with pruritogenic factors which contribute to the maintenance of the symptoms. Like Kantor & Lookingbill<sup>(16)</sup> we also observed that few patients had more than one underlying disease and combination of kidney disease, liver disease and hypothyroidism. It may be speculated that these patients may represent an own subgroup with accumulation of several co-factors that finally leads to chronic pruritus of multifactorial origin.

To conclude geriatric patients with severe, chronic pruritus represents a non-homogeneous group with various etiology. The disease conditions may be associated with benign diseases to malignancy. There is however a group of geriatric patients in whom single disease does not exist and they have Pruritus of multifactorial origin.

### Conclusion

Why the elderly people are more prone for itching is not clearly understood. Most of the time it is difficult to ascribe to a single reason and hence the pruritus is multifactorial in origin. The altered function of the stratum corneum secondary to ichthyosis like changes probably plays important role in maintaining the chronicity of pruritus. It is also postulated that delayed repair and cutaneous hypersensitivity.

To histamine and aeroallergens do produce a subclinical eczema like situation. The present study reflects the clinical and etiopathological co-relation.

To pruritus in sub-Himalayan region. However there is a need of prospective trials.

To strengthen the findings.

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