

Generalized Pruritus among Elderly Attending Dermatology OPD in a Tertiary Care Centre – A Descriptive Study

Keerthi Joy Irimpan¹, Athira Sudhesan², Balachandran P.K.³, Kunjumani Sobhanakumari⁴

¹Senior Resident, Department of Dermatology, Government T.D Medical College Alappuzha, Vandanam, Kerala, India.

²Assistant Professor, Department of Dermatology, Government T.D Medical College Alappuzha, Vandanam, Kerala, India.

³Professor, Department of Dermatology, Government T.D Medical College Alappuzha, Vandanam, Kerala, India.

⁴Professor, Department of Dermatology, Government T.D Medical College Alappuzha, Vandanam, Kerala, India.

Received: 25-07-2022 / Revised: 25-08-2022 / Accepted: 15-09-2022

Corresponding author: Dr. Athira Sudhesan

Conflict of interest: Nil

Abstract

Background: Pruritus is the most common cutaneous symptom in geriatric population. Pruritus in aging skin may reflect primary skin disease, systemic disease or arise idiopathically. Aim of the study is to describe the various clinical patterns of presentation and etiological factors of generalized pruritus among elderly patients attending dermatology OPD, and to determine the quality of life in elderly patients with generalized pruritus.

Materials and methods: A descriptive study was conducted among 95 elderly patients with generalized pruritus, who attended the outpatient department of Dermatology of a tertiary care hospital in Kerala, South India from November 2018 to May 2020. Detailed history and complete clinical examination and investigations were carried out. Severity of pruritus was assessed using 5-D itch questionnaire. Quality of life was assessed using dermatology life quality index (DLQI). All data were analyzed using SPSS statistical software.

Results: This study highlights the various etiological factors, co-morbidities associated with generalized pruritus in elderly and how it affects their quality of life

Conclusion: Generalized pruritus among elderly can be an important dermatologic clue for the presence of a significant underlying systemic disease. Proper examination of skin and relevant investigation would help in finding the etiology and optimising management.

Keywords: Generalized pruritus, Elderly, Senile pruritus, DLQI

This is an Open Access article that uses a fund-ing model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

Introduction

Old age population is increasing worldwide. There has been an increasing international awareness of health issues relating to aging population in recent years. The health problems of the elderly

are complicated by social, economic and psychological factors. These problems are usually multiple and are often masked by sensory and cognitive impairments, so that special skills are required to detect them.

[1] Pruritus is the most common skin disorder in the geriatric population. [2] Pruritus is defined as an unpleasant cutaneous sensation that provokes the desire to scratch. [3] Acute itch (lasting less than 6 weeks) may provide a protective function. Chronic pruritus refers to daily or almost daily itching, lasting more than 6 weeks [4] is mostly a nuisance. The prevalence of pruritus increases with age and can be partially attributed to a decline in the normal physiological functions of the skin.

The possible aetiological mechanisms of pruritus in the elderly, can be attributed to various factors, including dermatological, systemic, neurological and psychogenic diseases, and also, a manifestation of an adverse cutaneous drug reaction.

Pruritus in elderly people has an important influence on their physical and psychological well-being. Severe pruritus can interfere with work, sleep and daily activities [5]. Its prevalence is increasing with the rapid growth of the elderly population. Because of the increasing prevalence and potential of pruritus to profoundly influence quality of life in elderly patients, the management needs to be carefully tailored and optimised to individual patients.

Clinically, pruritus has been described as the most frequent symptom in dermatological conditions. It has a significant impact on patient's quality of life as it causes various problems related to sleep, anxiety, attention, and sexual function. Moreover, chronic pruritus has got a significant burden on the society in terms of health-care cost and treatment challenges.

This study is done to know the underlying dermatological and systemic disease prevalent among elderly persons (age>60yrs) [6] attending the Dermatology OPD with pruritus. and to determine the quality of life in elderly patients with generalized pruritus.

Though pruritus is a common presenting symptom among our elderly population, only few studies have been done in India. So, the information obtained from this study could be useful for more effective delivery of health services and thereby providing better quality of life for the elderly.

Materials and Methods

This descriptive study was done on 95 elderly persons aged 60yrs or more attending Dermatology OPD of a tertiary care hospital in Kerala, South India, with complaints of generalized pruritus from November 2018 – May 2020. Patient with localized pruritus were excluded from the study.

After obtaining permission to conduct the study from Institutional Ethics Committee and Institutional Research Committee, patients were enrolled into the study. They were educated regarding all aspects of the study and an informed written consent was taken. Individual proforma was filled with special focus on history of comorbidities and drug intake. Severity of pruritus was assessed using 5 D itch questionnaire.

Quality of life was assessed using dermatology life quality index (DLQI). Detailed clinical examination and dermatological examination to look for the distribution and morphology of primary and secondary skin lesions if any, was done. A detailed examination of all systems was done. Blood investigations like complete blood count, renal function test, liver function test, blood sugar, thyroid function test, peripheral blood smear, viral markers were done in all patients. Serum Prostate specific antigen (PSA), Chest Xray, Ultrasound abdomen and skin biopsy were done whenever necessary.

Data were entered in Microsoft excel sheet and was analysed using SPSS (statistical program for social science, version 16) software. Qualitative data was analysed

using percentages and proportions. Quantitative data was analysed using Mean and Standard deviation. Association between various variables and itch severity was checked using chi-square test.

Observations and Results

95 patients in the age group of more than 60 years were included in the study. Eldest was a 93year old male. Maximum no of

patients was in the age group between 60 and 69 years (52%). Out of the 95 patients, 58 were males (61%) and 37 were females (39%). Male tofemale ratio was 1.57:1.

Chronic pruritus (>2 weeks) was recorded in 64.2 % of the patients, acute pruritus (<2 weeks) in 35.8% of the patients [Figure-1]

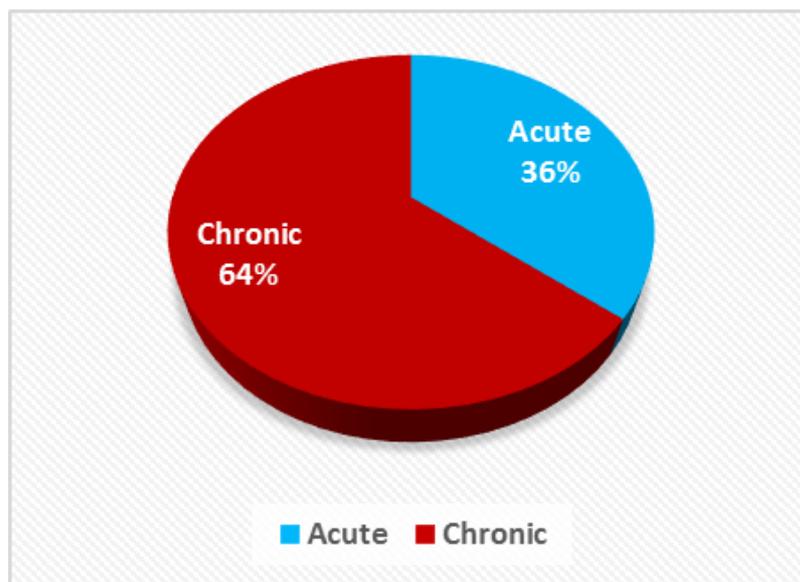


Figure 1: Distribution of the sample according to duration of pruritus

Diabetes mellitus was the most prevalent comorbidity, present in 17.9% patients. Thyroid disorder was seen in 9.5%, liver disorder in 2.1%, renal disorder in 1.1%, psychiatric disorder in 1.1%, neurologic disorder in 2.1% and internal malignancy in 4.2% of our patients. [Table-1]

Table 1: Distribution of the sample according to co morbidities

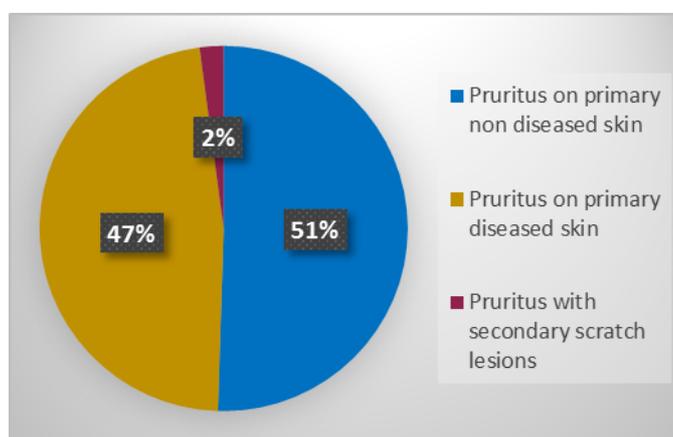
Co morbidities	No of patients	Percent
Diabetes	17	17.9
Thyroid disorders	9	9.5
Internal malignancy	4	4.2
Liver disorders	2	2.1
Neurologic disorders	2	2.1
Psychiatric disorders	1	1.1
Renal disorders	1	1.1
Other comorbidities	27	28.4
No comorbidities	47	49.5

Out of 95 patients, 48 patients were on medication for their comorbidities. 32.6 % were on drugs known to produce pruritus. 17.9 % patients were on other drugs like antiplatelets, thyroxine, bronchodilators etc [Table-2].

Table 2: Distribution of the sample according to drug intake

Drugs	No of patients	Percent
Calcium channel blockers	11	11.6
Statin and other drugs	8	8.4
Statin and calcium channel blockers	3	3.2
Calcium channel blockers and other drugs	3	3.2
Statins alone	2	2.1
ACE inhibitors and other drugs	2	2.1
Chemotherapeutics	2	2.1
Other drugs	17	17.9
No drugs	47	49.5

Pruritus on primary non diseased, non-inflamed skin was the most common clinical presentation, seen in 50.5 % of the patients [Figure-2]. Xeroderma was present in 73.7 % of the patients. Among patients with xerosis, 35.7 % were on drugs like statins, calcium channel blockers and other drugs.

**Figure 2: Distribution according to clinical presentation**

Among 95 patients, 52 showed clinical pattern typical for specific dermatological disease. 43 patients had no skin manifestation excluding xeroderma. Eczema was the most common dermatologic disease, seen in 14.7% of the patients [Figure 3]. Patients with dermatological diagnosis had severe grades of pruritus. This association was found to be statistically significant with a p value < 0.05 (chi-square test). Presence of xerosis also was found to be associated with severe pruritus, p value < 0.05 (chi-square test).

On investigations, mild anemia was seen in 12 patients. Moderate and severe anemia was seen in 2 and in 1 patient respectively. Among those with anemia, 1 patient had chronic kidney disease and 1

patient had systemic malignancy. Raised random blood sugar level was seen in 9 patients. Out of these, 7 were known diabetic patients. Serum urea levels were raised in 4 patients. One of these patients was a known case of chronic kidney disease. Serum bilirubin was raised in 3 patients. Among these 3 patients, one had a known chronic liver disease. Serum TSH levels were raised in 2 patients. Both these patients had no history of thyroid disorder. One patient was positive for hepatitis C antibody. We couldn't find any association between haemoglobin levels or random blood sugar and pruritus in our study.

Out of 95 patients, 49.5% were found to have dermatological cause for pruritus. Systemic cause was found in 20%. Mixed

cause in 15.8%. Psychogenic cause was found in 1 patient [Table-3].

Table 3: Distribution of the sample according to possible cause of pruritus

Possible cause of pruritus	No of patients	Percent
Dermatological origin	47	49.5
Systemic	19	20.0
Mixed	15	15.8
Psychogenic	1	1.1
No specific cause obtained	13	13.7

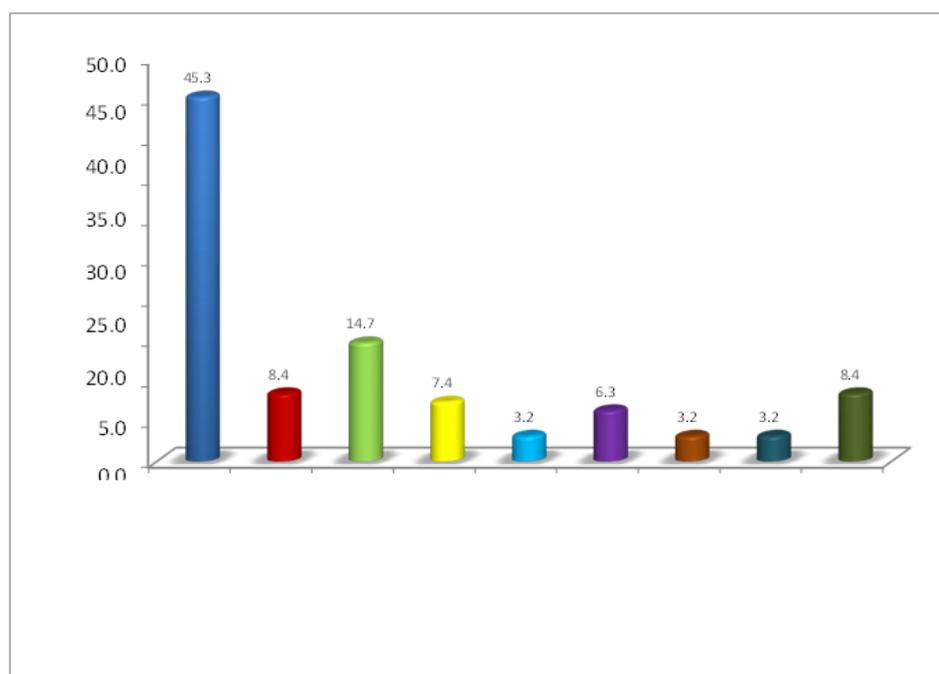


Figure 3: Distribution of the sample according to dermatological diagnosis for cause of pruritus

X axis – Dermatological diagnosis for cause of pruritus.

Y – Percentage of patients.

Itch severity was assessed using 5D pruritus scale. Severe pruritus was seen in 60% of patients. Moderate pruritus and very severe pruritus were seen in 33.7 % and 5.3% respectively. No significant association was found between comorbidities and itch severity in our study.

On assessment of DLQI, in 62.1% of patients, pruritus had a small effect on their life. 31.6% reported moderate effect and 6.3% reported a very large effect. As the severity of pruritus increased, the quality of life of our patients worsened. Severe/very severe pruritus was more

associated with moderate/very large effect on quality of life. The association between itch severity and quality of life was found to be statistically significant. (p value 0.045)

Discussion

Generalized pruritus is a common presentation in elderly. It may be due to dermatologic, systemic, psychiatric or neurologic disorder. In our study, we enrolled 95 patients with age more than 60 years. Nearly two third of our patients were males. 64% of our study population had chronic pruritus, lasting more than 6 weeks. 36 percentage presented with acute

pruritus. Elderly people are particularly more prone for chronic pruritus because of physiological aging of skin, comorbidities, polypharmacy etc. Diabetes mellitus was the most prevalent comorbidity in our study population, seen in 17%. Another study of chronic pruritus by Wallengren et al. also found diabetes mellitus in 11% of its study population [7].

Thyroid disorder was seen in 9.5% in our study. But it was seen in 8.6% and 4.35% in studies by Wallengren et al. and Yong et al. respectively [7,8]. Beare et al. reported a low prevalence of thyroid disorder (2.3%) among those with generalized pruritus. [9]

In our study, liver disorder was seen in 2.1%. Similarly liver disease was seen in 2.17% in study by Yong et al. and 4.6% in Beare et al.

Renal disorder was seen in 1.1% in our study while Yong et al. reported it in 10.87%. Psychiatric disorder was seen in 1.1% in our study whereas in a study by Yong et al., depression alone was seen in 2.17%. On the contrary, in a study by Wallengren et al., 22% of our patients had psychiatric diseases.

Neurologic disorder was seen in 2.1% in our study. But in a study by Rezske et al., neurological disorders were seen in 11.1% of pruritic subjects. [10] Internal malignancy was present in 4.2% of the patients in our study which was similar to 6.52% seen in study by Yong et al. Lung carcinoma was present in 2 patients. One patient had oesophageal carcinoma, and another had breast carcinoma. Difference in prevalence of various comorbidities may be due to genetic factors, regional variation and health seeking behaviour.

Fifty percentage of our study population were on medication for their comorbidities. Calcium channel blockers were the most commonly prescribed single group of drug. 32.6% of our patients were on drugs known to produce itching. 17.9 % patients were on other drugs like

antiplatelets, thyroxine, bronchodilators etc.

Pruritus on primary non diseased skin was the most common clinical presentation, seen in 50.5% of our patients. Contrast to this, study by Thaipisuttikul et al. found pruritic skin disease to be the most common elderly problem, seen in 41%. [11]

Xerosis was present in 73.7% of our study population. This finding was in concordance with various other studies like that of Valdes-Rodriguez et al. where sixty-nine percentage of elderly patients with itch presented with xerosis. [12] In contrast, xerosis was reported in 11.6% in study by Darjani et al. and in 38.9 % in study by Thaipisuttikul et al. [13,11]. This difference may be due to regional differences, changes in climate and changes in skin care practices.

55% of our patients showed clinical pattern typical for specific dermatological disease. Forty-five percentage had no skin manifestation excluding xerosis. Eczema was the most common dermatologic disease, seen in 14.7% of the patients. Eczema was seen in 22.8% of the elderly pruritus in the study by Thaipisuttikul et al. [11] Causes of eczema observed in our study were contact dermatitis, seborrheic dermatitis and stasis dermatitis.

Urticaria was seen in 8.4% of the patients. This was contrary to 4.7% reported by Thaipisuttikal et al.

Bullous pemphigoid was reported in 7.4 percentage of our patients, while Yalcin et al. reported a prevalence of vesiculobullous disease among elderly to be 1.5% [14].

Cutaneous T cell lymphoma was found in 3.2% of our patients which was similar to 2.1% observed by Darjani et al. and Liao et al. [13,15]

Scabies was seen in 6.3% of our patients. This was in concordance with study by Darjani et al., in which scabies was

reported in 4.3% of elderly patients. [13]

Psoriasis was seen in 3.2% of our study population. However, studies by Valdez-Rodriguez et al. and Thaipisuttikul et al. have reported psoriasis in 13% and 6.7% respectively [12,11].

Dermatophytoses were seen in 3.2% of our patients. This was contrary to studies by Liao et al. and Darjani et al. where fungal infections were seen in 38.0% and 8.2% of elderly patients. [15,13] Relative low prevalence of eczemas, psoriasis and dermatophytoses seen in our study may be because, these disorders more commonly present with localised disease rather than generalised. Other dermatological disorders like pemphigus foliaceus, drug reactions and exfoliative dermatitis were seen in 8.4% of our patients.

Mild anemia was seen in 12.6% of our patients. Moderate and severe anemia were seen in 2.1 and 1.1 percentage respectively. Among those with anemia, one patient had chronic kidney disease and one had systemic malignancy. Random blood sugar level was raised in nine patients. Serum urea level was raised in four patients. Serum bilirubin was raised in three patients. Serum TSH level was raised in two patients. Both these patients were newly detected hypothyroidism. Anti HCV antibody positivity was detected in one patient.

In our study, 49.5% of patients were found to have dermatological cause for pruritus. This was in concordance with a study of chronic pruritus by Sommer et al. [16] where, an underlying dermatosis was identified in 41.8% of patients. Elderly pruritus was due to cutaneous conditions in 53.7% in a study by Reszke et al. [10] Systemic cause was found in 20% in our study whereas in a study by Sommer et al., a systemic disease including unidentified neoplasms was seen in 13.3%. Another study of generalized pruritus by Polat et al. also reported systemic etiologies of pruritus in 21.8 % of patients similar to our

study [18]. No case of neurologic pruritus was seen in our study which was similar to a study by Sommer et al. where it was reported in 0.4%. But Reszke et al. reports it in 11.1%. Also, in a study by Wallengren et al., neuropathic pruritus was seen in 17.2%. A single case of psychogenic pruritus was found in our study. Beare et al. reported psychogenic causes in 9.3%.

Sixty percentage of our patients reported severe pruritus according to 5-D itch severity score. Moderate pruritus and very severe pruritus were seen in 33.7 % and 5.3% respectively. But only 45.7% of patients with generalized pruritus reported either severe or very severe pruritus in the study by Yong et al. [8]

In 62.1% of our study population, pruritus had small effect on their life. 31.6% reported moderate effect and 6.3% reported a very large effect. Our mean DLQI score was 6.24 which was similar to a study conducted in Singapore by Teoh et al. (mean DLQI value 6.7) [17].

Results of study by Valdes-Rodriguez et al. showed that elderly females tend to have a higher visual analogue score for itch, longer itch duration, and increased frequency of itch, when compared with males. However, we didn't find any association between gender and itch severity in our study.

The presence of diabetes mellitus showed no association with itch in our study population. A study by Neilly et al. also reported similar findings [19]. But in a study by Valdes-Rodriguez et al., the presence of diabetes mellitus highly correlated with itch in elderly population [12]. A study in elderly subjects by Teoh et al. also found diabetes to be a statistically significant predictor of pruritus. [17] No significant association could be found between other systemic comorbidities and generalized pruritus from our study. Similar to our study, there were no significant associations

between major systemic risk factors and generalized pruritus in population-based study by Yong et al. [8]

Patients with dermatological diagnosis had severe grades of pruritus in our study. This association was found to be statistically significant. Similarly, the presence of dermatoses correlated with a higher itch intensity in study by Valdes-Rodriguez et al. [12] Presence of xerosis was found to be associated with severe pruritus in our study. This was similar to the study by Valdes-Rodriguez et al. in which prevalence of chronic itch correlated with xerosis.

In our study, we didn't find any association between serum haemoglobin, random blood sugar levels and severity of itch. Similar to our study, there was no significant difference in the intensity of pruritus between subjects with and without clinically defined anemia in the study by Yong et al. [8] But, higher haemoglobin concentration was found to be associated with lower risk of pruritus in the study by Reszke et al. [10] Also, a significant difference was noted in the levels of serum urea between patients with and without pruritus in a study by Hu et al. [20] No such association was found in our study Quality of Life and Itch Severity. [21]

In our study, it was observed that as the severity of pruritus increased, the quality of life worsened. Severe or very severe pruritus was associated with moderate or very large effect on quality of life. This was in concordance with previous studies which evaluated pruritus in dermatology clinics. In study by Valdes-Rodriguez et al. [12] on Hispanic geriatric population, higher itch intensity was found to be associated with lower quality of life measures.

Conclusion

A significant proportion of elderly patients suffer from chronic pruritus. Xeroderma and chronic drug intake play a major role in the development of pruritus in this

population, along with various dermatological and systemic diseases. Severe or very severe pruritus is associated with moderate or very large effect on quality of life. Elderly people are a vulnerable population group with an increased prevalence of physical and cognitive disability, poor hygiene and lack of access to health care systems. Prompt identification of the underlying cause is necessary for optimal management and improvement in the quality of life. More studies concerning pruritus in elderly are required for better awareness in this regard.

Limitation of Study

Our study included a small sample size. A statistically significant relation between various aetiological factors and itch severity couldn't be established owing to small sample size and multiple confounding factors.

References

1. Abolfotouh MA, Daffallah AA, Khan MY, Khattab MS, Abdulmoneim I. Psychosocial assessment of geriatric subjects in Abha City, Saudi Arabia. *EMHJ*2001; 3: 481- 91.
2. Jafferany M, Huynh TV, Silverman MA, Zaidi Z. Geriatric dermatoses: a clinical review of skin diseases in an aging population: Geriatric dermatoses. *Int J Dermatol.* 2012(e); 51(5):509–22
3. Twycross R, Greaves MW, Handwerker H, Jones EA, Libretto SE, Szepietowski JC, et al. Itch: scratching more than the surface. *QJM Mon J Assoc Physicians.* 2003(e);96(1):7–26.
4. Rajagopalan M, Saraswat A, Godse K, Shankar DK, Kandhari S, Sheno S, et al. Diagnosis and management of chronic pruritus: An expert consensus review. *Indian J Dermatol.* 2017(e);62 (1):7
5. Chinniah N, Gupta M. Pruritus in the elderly - a guide to assessment and management. *Aust Fam Physician.* 201

- 4(e);43(10):710–3.
6. Older persons - UNHCR|Emergency Handbook [Internet]. [aipatua 2021(e) 2a]. Available at: <https://emergency.unhcr.org/entry/43935/older-persons>
 7. Wallengren J, Ferm I, Sterner M. Somatic and Psychiatric Comorbidity in Patients with Chronic Pruritus. *Acta Derm Venereol.* 2010(e);90(4):395–400.
 8. Yong SS, Kwan Z, Ch'ng CC, Yong ASW, Tan LL, Han WH, et al. Self-reported generalised pruritus among community-dwelling older adults in Malaysia. *BMC Geriatr.* 2020(e) ;20(1):223.
 9. Beare JM. Generalized pruritus. A study of 43 cases. *Clin Exp Dermatol.* 1976(e) ;1(4):343–52.
 10. Reszke R, Białyński-Birula R, Lindner K, Sobieszczńska M, Szepietowski J. Itch in Elderly People: A Cross-sectional Study. *Acta Derm Venereol.* 2019(e);99(11):1016–21.
 11. Thaipisuttikul Y. Pruritic skin diseases in the elderly. *J Dermatol.* 1998(e); 25(3):153–7.
 12. Valdes-Rodriguez R, Mollanazar N, González-Muro J, Nattkemper L, Torres- Alvarez B, López-Esqueda F, et al. Itch Prevalence and Characteristics in Hispanic Geriatric Population: A Comprehensive Study Using a Standardized Itch Questionnaire. *Acta Derm Venereol.* 2015(e); 95(4):417–21.
 13. Darjani A, Mohtasham-Amiri Z, Mohammad Amini K, Golchai J, Sadre- Eshkevari S, Alizade N. Skin Disorders among Elder Patients in a Referral Center in Northern Iran (2011). *Dermatol Res Pract.* 2013(e); 2013:1–4.
 14. Yalcin B, Tamer E, Toy GG, Oztas P, Hayran M, Alli N. The prevalence of skindiseases in the elderly: analysis of 4099 geriatric patients. *Int J Dermatol.* 2006(e) ;45(6):672–6.
 15. Liao YH, Chen KH, Tseng MP, Sun CC. Pattern of Skin Diseases in a Geriatric Patient Group in Taiwan: A 7-Year Survey from the Outpatient Clinic of a University Medical Center. *Dermatology.* 2001(e) ;203(4):308–13.
 16. Sommer F, Hensen P, Böckenholt B, Metze D, Luger TA, Ständer S. Underlying diseases and co-factors in patients with severe chronic pruritus: a 3- year retrospective study. *Acta Derm Venereol.* 2007(e) ;87(6):510–6.
 17. Teoh YL, Teo RY, Yeo B, Lim KH, Koh MJ. Elderly Hospitalised Patients- The Impact of Itch and its Prevalence. *Ann Acad Med Singapore.* 2016(e);45(4):134–7.
 18. Polat M, Öztas P, İlhan MN, Yalçın B, Alli N. Generalized Pruritus: A Prospective Study Concerning Etiology. *Am J Clin Dermatol.* 2008(e) ;9(1): 39–44.
 19. Neilly JB, Martin A, Simpson N, Mac Cuish AC. Pruritus in Diabetes Mellitus: Investigation of Prevalence and Correlation with Diabetes Control. *Diabetes Care.* 1986(e)1a;9(3):273–5.
 20. Hu T, Wang B, Liao X, Wang S. Clinical features and risk factors of pruritus in patients with chronic renal failure. *Exp Ther Med [Internet].* 2019(e) 16a [aipatua 2020(e) 13a]; Available at: <http://www.spandidos-publications.com/10.3892/ etm. 2019.7 588>.
 21. Al-Khafaji D. K. H., Al-Quzwiny K. Y. H., & Al-Daami Q. J. Analytical Implication of Cardiac Biomarkers in Patients with Acute Ischemic Stroke: A Cross-Section Study. *Journal of Medical Research and Health Sciences,* 2022;5(8): 2145–2152.