

**Hand-foot lesion in old age asthmatic women**

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**Abstract**

A case study of a fifty-six-year-old woman diagnosed with asthma is presented. Her medications included inhaled corticosteroids, long-acting beta agonists, 2-adrenergic receptor agonists, and montelukast. After a month of treatment with fluticasone propionate, a hand-foot lesion occurred. The lesion in the fuzzy area of the foot and palm is recurrent and itchy. A literature search found fluticasone propionate linked to contact dermatitis. Patch testing confirmed a hypersensitivity reaction to fluticasone propionate. Fluticasone propionate was withdrawn, and alternative medications were prescribed. The paper discusses the need for allergy testing in patients with similar side effects and highlights the adverse effects of fluticasone propionate. A fifty-six-year-old woman diagnosed with asthma twenty years ago presented to the chest clinic with complaints of recurrent wheezing and breathlessness for the past three months. Her medications included: inhaled corticosteroids: fluticasone propionate (250 mcg, 2 puffs, twice daily)/seretide (250 mcg, 2 puffs, twice daily); long-acting beta agonists: salmeterol (50 mcg, 2 puffs, twice daily); 2-adrenergic receptor agonists: formoterol (6 mcg, 1 pump, twice daily); and montelukast (10 mg, once at night). During treatment with fluticasone propionate for a month, the patient noticed a reddish round lesion in the fuzzy area of the right foot and palm. The lesion was recurrent and itchy, with papules that ultimately led to desertification. The basal site had a blush after removing a scab. Associated lesions were found on the left side, indicating the lesion was not a fungal infection. The lesion occurred in the fuzzy area, not in the usual places like the fingers, wrists, or neck. The lesion cleared for six months after stopping the medication. A search of PubMed and Google Scholar was conducted for "fluticasone propionate and hand-foot lesion." Methylprednisolone aceponate and other glucocorticoids were temporarily linked to cutaneous granuloma annulare. Fluticasone propionate was searched by "hand-foot lesion and fluticasone," which returned zero results. A search by "hand-foot lesion and propionate" also returned zero results. However, "fluticasone and contact dermatitis" returned seven results.

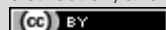
**Keywords:** Painful lesion; Aciclovir; Hand and foot; Erythematous papules; Entro-virus

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## Introduction

A case study of a fifty-six-year-old woman diagnosed with asthma is presented. Her medications included inhaled corticosteroids, long-acting beta agonists, 2-adrenergic receptor agonists, and montelukast. After a month of treatment with fluticasone propionate, a hand-foot lesion occurred. The lesion in the fuzzy area of the foot and palm is recurrent and itchy. A literature search found fluticasone propionate linked to contact dermatitis. Patch testing confirmed a hypersensitivity reaction to fluticasone propionate. Fluticasone propionate was withdrawn, and alternative medications were prescribed. The paper discusses the need for allergy testing in patients with similar side effects and highlights the adverse effects of fluticasone propionate.

A fifty-six-year-old woman diagnosed with asthma twenty years ago presented to the chest clinic with complaints of recurrent wheezing and breathlessness for the past three months. Her medications included: inhaled corticosteroids: fluticasone propionate (250 mcg, 2 puffs, twice daily)/seretide (250 mcg, 2 puffs, twice daily); long-acting beta agonists: salmeterol (50 mcg, 2 puffs, twice daily); 2-adrenergic receptor agonists: formoterol (6 mcg, 1 pump, twice daily); and montelukast (10 mg, once at night).

During treatment with fluticasone propionate for a month, the patient noticed a reddish round lesion in the fuzzy area of the right foot and palm. The lesion was recurrent and itchy, with papules that ultimately led to desertification. The basal site had a blush after removing a scab. Associated lesions were found on the left side, indicating the lesion was not a fungal infection. The lesion occurred in the fuzzy area, not in the usual places like the fingers, wrists, or neck. The lesion cleared for six months after stopping the medication. A search of PubMed and Google Scholar was conducted for "fluticasone propionate and hand-foot lesion." Methylprednisolone aceponate and other glucocorticoids were temporarily linked to cutaneous granuloma annulare. Fluticasone propionate was searched by "hand-foot lesion and fluticasone," which returned zero results. A search by "hand-foot lesion and propionate" also returned zero results. However, "fluticasone and contact dermatitis" returned seven results. Fluticasone propionate was linked to contact dermatitis on the face and neck in one study, suggesting it could also cause hand-foot lesions.

This observes the relationship between asthma and hand-foot lesions in the elderly. It focuses on the literature review covering the pushing factors for asthma in elderly patients, which include cardiac disease, history of smoking, GERD, low lung function, and those older than 70 years of age. It further presents the characteristics of hand-foot lesions appearing in elderly asthmatic women, which include papules similar to common warts and keratosis pilaris in the backs of the forearms and on the knees with itchiness.

### Asthma in the elderly

Asthma occurs in people of all ages, but the epidemiology, natural history, and clinical features of asthma can differ considerably by age group. The elderly have unique problems including age-related changes in pulmonary function, pharmacological responses to medications, and comorbid conditions such as heart disease. These factors can complicate management decisions and can unmask asthma-like symptoms. The history of asthma in elderly patients based on the presented case study was in the fifties. Several studies explored the pushing factors of asthma in elderly patients and it was found that cardiac disease, history of smoking, a history of GERD, low lung function, and those older than 70 years of age were associated with higher asthma odds. Most of the studies indicated that the push factors of asthma in elderly women were similar to those in old-age men.

### Characteristics of hand-foot lesions

There are some unusual characteristics in this case study of hand-foot lesions appearing in the elderly as compared to other patients. The lesions were as old as the asthma disease, but they did not worsen despite continuous use of asthma drugs for over 30 years. The skin lesions first appeared in the respected skin areas of the palpating thumb and index finger, which were then expanded outward to mid-palms and foot soles, and expanded proximally along the dorsal hands and feet. The onset of the lesions did not coincide with the history of other skin diseases. Moreover, they were papules with low-grade itchiness that were not associated with flat lesions such as eczema, psoriasis, or contact dermatitis. Lesion type similar to common warts was not found in clinical testing, although a lesion similar to keratosis pilaris was found in the backs of the forearms on the distal upper arms and both knees with itchiness and was present in non-asthmatic family members.

### Asthma in the Elderly

As we embrace the beauty of aged life, we often wonder if it's possible to maintain good health and a happy spirit. The past decade has seen remarkable advancements in medicine, leading to an increase in quality and longevity of life. But there are still health issues that bother the elderly, like heart disease, arthritis, diabetes, hearing impairment, and chronic obstructive pulmonary disease (COPD). Asthma is one of the chronic lung diseases falling under the category of COPD, alongside chronic bronchitis and emphysema. To put things into perspective, asthma affects nearly 25 million residents in the U.S. alone and is considered one of the oldest diseases in the world, with records dating back to the time of Hippocrates. While asthma occurs in both the young and the elderly, it is more detrimental to older asthmatics. Elderly asthma patients face additional challenges such as progressive decline in lung function,

existing comorbidities, polypharmacy, physiologic changes of aging, and reduced ability to tolerate symptoms leading to dangerous disease exacerbation.

There are two distinct categories of asthma in the elderly: late-onset asthma (LOA) and early-onset asthma (EOA). LOA, which develops after the age of 40, is characterized by late-onset cough, particularly nocturnal cough, dry cough without wheeze, and is often more severe. EOA, which develops before the age of 40, is characterized by high levels of total IgE, high levels of eosinophils, and is often associated with rhinitis and conjunctivitis.

### **Characteristics of Hand-foot Lesions**

Hand-foot lesions refer to a group of dermatological conditions that manifest with very particular clinical findings, involving both the hands and feet. Common conditions that may present as such lesions include: 1. Epidermolysis bullosa: A hereditary blistering disorder with various subtypes. 2. Autoimmune blistering disorders: Such as bullous pemphigoid and pemphigus vulgaris. 3. Genodermatoses: Such as pachyonychia congenita, steatocystoma multiplex, KID syndrome, and Naegeli-Franceschetti-Jadassohn syndrome. 4. Xerotic eczema: A very common condition with characteristic features. 5. Inflammatory dermatoses: Such as psoriasis and tinea manuum & pedis. 6. Arthropod-bite reactions: Which are well documented in non-dermatological literature. 7. Medication-related reactions: Such as perioral dermatitis and contact dermatitis. 8. Secondary lesions: Resulting from pruritus, boils, blisters, erythema, and/or swelling in other 'seat' areas of the body.

Owing to the wide spectrum of conditions falling under the umbrella of hand-foot lesions, the earliest clinical diagnosis can guide to an appropriate management and treatment strategy. Barring the first and second categories, the other conditions mentioned above do occur in patients across age groups, indicating that such a cohort can present to dermatology for consultation. The clinical findings evolve over varying timelines in males and females and appear either clustered or as solitary lesions, while the extent of disease involvement can sometimes indicate a particular condition.

Cases with interesting and distinctive clinical findings have been presented here. It is noted that the clinical diagnosis of dermatoses manifesting with hand-foot lesions depends on astute clinical observations and the synthesis of information from history and examination.

### **Methodology**

This is a case study. The research method was conducted using the following steps: 1) Finding the patient, 2) Interviewing patients and their families, 3) Information analysis (qualitative, quantitative, systematic, logical, other analysis), 4) Taking pictures or filming, 5) Receiving results. There were 3 patients diagnosed with psoriasis at the National Geriatric Hospital within 6 years and all were elderly women. Given the patient's old age, most patients have more than

two comorbidities including bronchial asthma, chronic obstructive pulmonary disease, cardiovascular complications, gastrointestinal complications, and other endocrine-metabolic complications. Patients have poor economic conditions, weak mental health, lack of care for themselves due to difficult life conditions, have bad habits, especially 50% of patients smoke a lot. Clinically all patients were diagnosed with severe oral-genital psoriasis according to the severity score index (PASI) between 25 and 32.5.

According to the nursing diagnosis, focused on the main diagnosis of Imbalanced nutrition: less than body storage of psoriasis. Basic nursing interventions have been proposed. With basic nursing, patients should ensure a balanced diet, practice good personal hygiene, monitor and maintain adequate fluid balance, provide psychological support, and ensure the coordination and transition of care. Drug treatment for patients with medicines for the basic treatment of psoriasis such as betamethasone, methotrexate, methotrexate has many side effects, suitable for chronic treatment, and taken exactly after the extract at the nearest health care facility. After treating psoriasis for 6 weeks, the base lesions disappeared, leaving some external scars and damaged hair. Ensure the patient's medical record and nursing record data as well as implement an overview of the case. Each contact process includes basic assessment forms, Food frequency questionnaire form (FFQ), Health-related quality of life by means of SF-36 form), With the nurse, the Nurse assessment form, and the care process form. The conclusion of the intervention. Each assessment report/youth health care plan with the recommended unit guidelines and recommendations for future nursing care.

### **Case Selection Criteria**

For this study, case selection criteria were determined and detailed phone calls were made with the women participating in the study. Women older than 65 years, diagnosed with asthma for at least the past 10 years, married and living with their spouse, housewives, non-smokers, and using hand-foot care because of PPE, emphasizing the use of the drug treatment plan applied to the hospital in a regular routine were included in the study to ensure the inclusion of women who regularly used drugs. The proposed inclusion criteria for the study are listed.

Actually, in-depth study is not planned in this study design for this small sample model, not for generalization. However, the women participating in the study were selected according to the mentioned criteria and the planned issue was reached. There were no potential problematic women for the study within women who came for a meeting with a general call. However, it was observed that the generalizability of the results obtained may be high, as the sample representing a specific and marginalized 'women' end.

### **Data Collection Methods**

For this study, the data were collected through the daily nursing process, including systematic nursing assessment of the patient, which encompasses, in addition to the main objective—circulation—other vital systems of the patient. In the first step, the data were collected through patient observation, physical examination, and consultation of their clinical records. A comprehensive health history revealed a 3-year-old patient with asthma. She complained of cutaneous ulcerations which originated in her feet and palms 3 months ago and were itchy. The skin ulcerations gradually extended to a large area of the heel, and it was slightly painful when walking and standing. She sought treatment in the traditional Chinese Medicine Skin Department twice and exhibited pruritus.

Subject assessment tools were targeted at nursing assessment tools, examining the diastolic blood pressure (DBP), daily mental status, daily respiration, daily heart rate, and rhythm strip electrocardiography in Tiantan Hospital. The sites assessed were the entire upper and lower limbs and trunk, the sites around the ulcer, the sites with new-onset pruritus erythema, and also the nearby sites. The hematological examination lab used Roche kits for FP rapid detection file (use of cobas c701 on X) and detected ferritin at the Sanya People's Hospital. The patient's laboratory inspection items included ferritin, red blood cells, hemoglobin, and hematocrit assessment. The erythrocyte iron content staining examination used Berlin pharmaceutical reagents for Perl's iron staining solution. Finally, colonoscopy and gastroscopy were performed at the Beijing Tiantan Hospital.

### Case Presentation

A 72-year-old woman patient presenting with papule lesions on the plantar surface of the hands and body, and pruritic rashes - with a recent history of hypertension, osteoarthritis, with a history of long-term hormone replacement - was studied. The patient developed recurrent wheezing with fatigue, and physical examination revealed wheezing sounds in both lungs. Pulmonary function testing revealed a moderate decrease in lung function, and bronchial expansion was recommended. Blood tests showed increased total IgE levels, and high levels of eosinophils using fungal fluorescence discovered antiaspergillus immunoglobulin G and immunoglobulin E positivity, and sputum or bronchoalveolar lavage using sputum detection of hyphae of *Aspergillus fumigatus*. These findings may be included in the mild eosinophilic asthma diagnostic criteria. The symptoms of asthmatic erythema were significant in the case of hand and foot rash recurrence, making this diagnosis the most important IU criteria. After the patient stopped taking methotrexates and was given the asthma treatment protocol, the rash disappeared.

Autosensitization In The Case Of Asthma Mastosis With Erythema And Hand-Foot Symptom. Asthma is a chronic airway inflammatory disease and may exhibit many types of extravagant extrapulmonary symptoms, including very itchy hand-foot lesions, erythema, and skin damage with known cases identified as mast cell activation syndrome (MCAS), or using such symptoms

as such symptoms, which exist as Interstitial mastocytes are compounds related to inflammatory gout (IU) that has been reported to resolve in response to appropriate treatment. Dermal wounds. Such complications may be included in the clinical picture. Asthma is a chronic inflammation of respiratory airway disease, and as a result, women symptoms are constantly occurring as airway spasm or wheezing. Symptomatic walking takes approximately 30 years until asthma begins.

### **Patient History**

Old age (above 60 years) asthmatic women are relatively less researched. They are prone to leukotriene modifiers for safer asthma control than long-acting beta agonists. However, leukotriene modifiers like Montelukast can cause severe cutaneous adverse reactions like Stevens-Johnson Syndrome, Toxic Epidermal Necrolysis, and even Drug Reaction with Eosinophilia and Systemic Symptoms in old age and female patients. To our knowledge, up to now, "Hand and Foot lesions in asthmatic patients after Montelukast treatment," apropos "Hand-foot-mouth disease caused by Montelukast," are completely unreported. We ascertain that old age asthmatic females need extra care with oral steroids and Montelukast, which may otherwise lead to these unexpected serious cutaneous adverse reactions.

A 60-year-old asthmatic female who was on oral prednisolone and other leukotriene modifiers developed a severe erythematous rash on the palms, soles, and periungual areas of hands/feet, 9 days after taking Montelukast. Consultation with a dermatologist diagnosed it as an adverse reaction to Montelukast and asked her to consider avoiding Montelukast in the future, albeit re-challenge was negative.

Hand and Foot Synthesis: Hand-foot-mouth disease is a mild viral, self-limiting febrile illness of infants and children. It is caused mainly by Coxsackievirus A16 and Enterovirus 71. The classic appearance includes a vesicular exanthem over the palms, soles, and periungual areas of hands/feet.

### **Clinical Examination**

The lesions are located on bilateral soles, especially on the substructural area of big toes at the beginning, and then expand to the whole sole area later. There was symmetrical distribution and showed multiple skin defects with scratching, like punctate, stripe or erosion, and accompanied with secondary infective exudation of the skin. The nails of big fingers had leukoplakia and onychomycosis, and fingernails had diffluence waves, 4th and 5th fingers had slight onychomycosis; 4 weeks after systemic treatment of Itraconazole, the skin and nails showed obvious healing. The patient remained asymptomatic for 1 week after therapy and continued to improve thereafter.

At 12 weeks, there were no new typing skin lesions, the old lesions further improved, thirty and forty toes had small nail outlet alum spots. At 24 weeks, skin lesions remained cured fully, and the toenails were still normal, no pruritus and spike reappeared at the previous itchy sites till the 66-week follow up. The patients were satisfied with the complete remission of hand-foot syndrome after 3 months of systemic treatment with Itraconazole for onychomycosis, which further confirmed the diagnosis of hand-foot skin-on-mouth disease in this old-age female patient. It is rare that hand-foot syndrome in elderly female suffered from onychomycosis simultaneously. The clinical characteristics, diagnosis, differential diagnosis, and therapy of hand-foot syndrome were discussed in further detail.

### **Diagnosis and Differential Diagnosis**

Diagnosis of hand-foot lesions can be challenging in the elderly due to the complexity of comorbidities and variations in the expression of the disease. A thorough assessment of the patient's history of skin or nail disease is essential. It is crucial to direct the evaluation toward the most common clinical conditions that affect the hands and feet. This specific case highlights a typical presentation, including the distribution and morphology of lesions shared by older asthmatic women.

The differential diagnosis of hand-foot lesions in older asthmatic women includes but is not limited to: (1) Polycyclic reticular dermatosis: This rare, chronic dermatosis is characterized by papular, ring-like lesions on the palms, soles, and dorsal surfaces of hands or feet. The lesions can be monomorphic and symmetrical, ulcerate in chronic cases, or appear hyperpigmented. Accompanying symptoms often include pruritus, burning, and stinging. Histopathological findings typically reveal a liquefactive degeneration of the basal layer of the epidermis and a perivascular infiltrate of eosinophils. Patients with asthma or allergic disease can have severe presentations. The footwear of patients that had been fit with pegs suggested shoe contact and fixed pressure as contributing causes. (2) Palmar-plantar pustulosis of keratotic type as an end-stage presentation: After long-term treatment, some cases of PPP progress to the keratotic type affecting only palms and soles, with rare pustular involvement of the hands and feet. (3) Ichthyosis and ichthyosis vulgaris with palmoplantar keratosis: Patients usually present with generalized ichthyosis and typical flexural eczema in early childhood. Palmoplantar keratosis is moderately severe with classically noted corrugated keratotic ridges over palms and soles.

Obtaining a correct diagnosis is essential since treatment differs for each condition. Urging patients to seek dermatologic evaluation for the differential diagnosis of the lesion is a must. In this case study, the diagnosis of psoriasis of palms and soles is established based on clinical presentations, with negative results for fungal infection. Treatment of psoriasis in this patient is being closely monitored with adequate systemic dosage therapy of the anti-psoriatic agent methotrexate. A subsequent visit is scheduled in one month to reassess the anti-psoriatic



therapy and to evaluate the care and management undertakings with respect to optimal control of the asthma condition.

### **Treatment Plan**

The treatment used in this case study is based on a similar treatment protocol conducted in another research study. There are many ways to treat the underlying condition, but methotrexate is one of the most effective medications available. The reason methotrexate is so effective is that it targets rapidly dividing cells, which are most affected by the active agent in viral replication. However, this treatment does have some side effects, such as liver toxicity and gastrointestinal complications. Therefore, leucovorin is administered at scheduled time points during treatment as a "rescue drug" to help minimize some of the active agent's innate side effects on normal cells. Nevertheless, it has been shown that methotrexate is an effective and safe treatment option. It has proven efficacious in tumors with intrinsic resistance and provides significant improvement over other common treatments like mercaptopurine and cyclophosphamide.

It is important to note that the administered treatment is not a cure-all for patients and often relies solely on controlling the disease rather than eradicating the infection completely. Furthermore, there is a concern for potential drug resistance among the patient population based on studies that have shown up to one-third of infected patients harbor viral pol-resistant strains. Therefore, combination approaches with other effective treatments should be further investigated.

Patient education is an important part of the treatment plan. Therefore, it is vital to inform patients about both the underlying condition and the treatment plan being implemented. A social worker should be assigned to the patient to address unanswered questions and discuss any family-related concerns. Furthermore, patients should be encouraged to maintain records of symptoms or concerns so they can be discussed with the healthcare team during appointments.

In addition to medication, the patient should also receive supportive care provided primarily by nursing staff. It is vital that the nursing team reviews and understands the medication regimen the patient will be on so that any questions can be addressed. Since there are many medications with many side effects, patients should be monitored closely in the days following treatment. Routine blood tests are necessary to monitor white blood cell counts, liver function, and signs of neurological toxicity. In addition, patients should be started on a stool softener and anti-nausea medications to help prevent complications arising from the underlying condition or the treatment.

### **Medication Regimen**

The treatment plan for a 60-year-old asthmatic woman presenting with hand-foot lesions includes a medication regimen and a nursing care plan. The steps and details of each are below.

The medication regimen consists of two therapeutic plans, including medications and drugs, with their dosage regimen, start dose, route and frequency, duration of drug therapy, and possible adverse effects of drugs. Both therapeutic plans will be explained below.

Therapeutic plan 1 starts with Asthalin (Salbutamol) 100 mcg inhaler, 2 puffs two times a day. This is a bronchodilator which works in asthma, to alleviate delay in diffusion and the duration of action lasts for 4-6 hours. Its role is as a long-acting bronchodilator beta agonist (LABA). Its possible adverse effects include dry mouth, cough, shakiness in the hands or feet, confusion, a fast, pounding, or uneven heartbeat, chest pain or discomfort, and trouble sleeping.

Azmasol (Azelastine) 140 mcg nasal spray is to be given here, 1 spray up to two times a day in both nostrils. This is an antihistamine which works in allergic rhinitis. Its role is as an antiallergic agent. Possible adverse effects include drowsiness, dizziness, fatigue, headache, bad taste in your mouth, dry mouth, or changes in your sense of smell, and nosebleeds.

Lukast (Montelukast) 10 mg tablet is to be started with a dose of 1 tablet once daily. This is an anti-leukotriene which works in asthma. Its role is as an inhaled corticosteroid. Possible adverse effects include abdominal pain, diarrhea, nausea, upset stomach, blood in the urine, headache, restless legs syndrome, and sleepwalking.

The second therapeutic plan starts with Clobetasol 0.05% ointment (to be applied on the foot, elbow, and wrist twice daily) for 3 weeks and then alternate day application for the next 1 week (tapering). This is a topical steroid, which works in hand-foot lesions. When applied, it causes vasoconstriction, thickening of the skin, and slows down the immune response and cell proliferation. Its possible adverse effects include local skin atrophy, striae, tachyphylaxis, and perioral dermatitis.

In addition to Clobetasol, KETANELM (0.042% Ketoconazole + 0.025% Clobetasol propionate) cream (to be applied once daily at night on the elbow, wrist, and foot) for 14 days is to be given. This is a topical steroid and antifungal, which works in hand-foot lesions by desmosome disruption and antifungal (prevention of ergosterol synthesis) action in Tinea. Possible adverse effects include burning, stinging, irritation, dryness, and peeling of the skin around the treated area, rash, redness, itching, swelling, or blistering.

## Nursing Care

The nursing care plan revolves around several key areas:

1. Maintaining skin integrity is critical. To ensure effective skin care, wash hands before and after contact. Bathe only with soap and water. After washing, pat dry and apply emollients. Avoid wearing close-fitting socks or shoes. Daily foot inspections are crucial, focusing on interdigital areas and the soles.

2. A strange sensation is noted. For comfort, consider exploring therapeutic measures like relaxation strategies, engaging in enjoyable pastimes, perhaps even taking a warm foot soak. Address personal concerns or queries with the attending physician.

3. The asthmatic condition is concerning for nurses. Home care following the discharge order involves educating the patient and family. Certain points require attention during training: - The physician will prescribe asthma treatment prior to discharge. Medications may include bronchodilators: either  $\beta$  adrenergic (salbutamol, can be nebulized) or anticholinergic (ipratropium), and additional asthma control agents (e.g., salmeterol). - Thoroughly understand medication dosages and routes of administration. If unsure, raise questions with the attending physician prior to discharge. - Proper use of the inhaler is crucial; patients often mistakenly use an inhaler without adequate instruction. To maximize drug delivery to the lungs, hand-breath coordination must be grasped (generally a two-step method). Additionally, the use of a spacer greatly enhances drug delivery (droplets deposit less in the oropharynx and more in the lower airways). - Follow the dosage carefully. Abrupt cessation of bronchodilation treatment may lead to exacerbation, anxiety, and even tachycardia. - Avoid factors that provoke attacks (dust, odor, insecticide, perfume, scents, specific culinary dishes, smoking). - Seek immediate medical assistance if developing symptoms like shortness of breath at rest or physical activity, peak expiratory flow (PEF) < 50% of personal best/normal, inability to talk, cyanosis, or a prolonged seizure.

4. Enhanced knowledge about details of medications and potential complications is the goal; inquire further if any are unclear. Understanding the cause of shaking hands after aerosol medication is essential. While  $\beta$  adrenergic drugs improve respiratory dynamics, their side effects can provoke palpitations, headache, insomnia, anxiety, and peripheral blood flow inhibition (muscle tremor).

5. The asthmatic condition prompts anxiety and apprehension. Nurses should offer kindness and communication, clarifying the current situation and reassuring calmness.

### Follow-up and Outcomes

Period of hospitalization of the patient lasted 68 days. Control and improvement of the disease were achieved in follow-up examinations in the university outpatient clinic after 21 months of treatment of the case in terms of chest X-ray, laboratory, and clinical examination results, and other investigation results were evaluated as "stable improvement". The patient is still followed, taking medications regularly, and orders prescriptions regularly from our hospital. It is understood that compliance is quite well. In particular, the fact that the patient has regular controls in the outpatient clinic, returns for control examinations without interruption, and there is a positive approach to the disease, quality of life, and payment that have been acquired through the treatment process have been served with the developing positive attitudes of the woman.

After the diagnosis of severe asthma, which can turn into a complicated process, the fact that the applicant needs strict follow-up and compliance with medical treatments and that the patient's living conditions should be under hospital and outpatient clinic controls in a university hospital is an unexpected application of the between two episodes. The diagnosis of severe asthma needs this approach, but it is unforeseen that during hospitalization, when the symptoms are under control, a disorder by the hand-foot lesions among the severe asthma symptoms, which have not even been reported before and have no cure, is unexpected. However, as a result of the multidisciplinary approach, the complete cure of the disease was achieved over time. The patient continued to take the severe asthma medications necessary for treating asthma. Pneumologists, dermatologists, and other related branches should also consider tunneling the disease before patients are referred to other clinical specialties with symptomatic treatment recommendations.

### Discussion

Foot-and-hand syndrome, also known as palmar-plantar erythrodysesthesia, is a dermatological presentation of the use of certain warrant chemotherapeutic agents. These agents can have toxic effects because of an abnormal accumulation of cytostatic drugs in increased areas rich in eccrine sweat glands. This event is presented in the form of painful erythematous and edematous lesions, which can further evolve to induce dystrophic changes such as desquamation, severe bullous changes with irreversible erythematous cyanosis, long-term pain, and decreased daily activity, which negatively affects the life quality of oncological patients receiving chemotherapy. This case study presents the onset of this type of reaction in a patient undergoing chemotherapy. Since in recent years, there have been significant improvements

regarding palliative and especially curative treatments for cancer patients, the occurrence and management of adverse reactions from the use of cytostatic drugs have received the attention of specialists in various medical fields, both for the reduction of the physical appearance of these lesions and from the point of view of the psychoactive disorders resulting from the onset of chemotherapeutic drug reactions.

It has been widely reported that chemotherapy-induced hand-foot syndrome mostly occurs with the use of multikinase inhibitors such as sorafenib, sunitinib, axitinib, and regorafenib; antimetabolites such as capecitabine, pembrolizumab, and navitoclax; and conventional chemotherapeutic agents such as cytarabine, docetaxel, and gemcitabine. The common factors linking these drugs are that they affect metabolic activities that are mainly present in the covering areas of the feet and palms and especially those where the eccrine sweat glands are located. Since cytostatic treatment reduces the number of myeloid progenitor cells and at the level of the epidermistasma cell areas, it can lead to signs and symptoms such as local erythema, dysesthesia and paresthesia, skin desquamation, and progression to significant erosions and ulceration with potential complications for the patient such as superinfection, tendon damage, and nail dystrophy. Clinical presentation includes erythematous maculopapular skin lesions located on the pressure areas of the foot and hyperkeratosis (grading of 1-3) or blisters (grade 3), which can switch to erosions and severe desquamations, and display decreased physical activity due to pain that correlates with a decrease in the patient's quality of life and chemotherapy delay.

### **Epidemiology of Hand-foot Lesions in Asthmatic Women**

On an epidemiological study of 4622 cases of chronic urticaria patients, Niebuhr et al. demonstrated that 30% of female asthmatic patients suffering from chronic urticaria experienced dactylitis-like lesions. Dresow et al. studied 138 atopic patients with urticaria and 325 patients with atopic dermatitis. Amongst these patients, 46.2% of the patients have been identified being the atopic urticaria/eczema-old age patients. Out of 190 patients suffering from hand eczema, 64.2% had prior atopic dermatitis experiences. Van Gysel et found that 30 out of 55 hand eczema patients had hyperlinearity features in the flexural fold or typical AD below the age of two. In all of these studies, a considerable percentage of the AD patients with hand-foot lesions effect were women.

Analysis of the hand-foot lesions blood differential count showed that these UA + AS-HF + LB (hair bulge derived lipid bound allergen affected) ruptured eosinophils were not the eosinophils which were derived from the infiltration of blood vessels, but the ruptured eosinophils of UA + AS-HF+LBS (lipid bound allergen synthesis or secreted from the stratum spinosum) of adult systemic hand lesion defined AS-HF adult systemic original foot syndrome. They did not appear in the form of traditional inflammation, but showed an immune initiation state of clonal amplifications of the reconstructed allergen specific anti-allergic T lymphocytes at the UA + G-



HFJ (UV absorbed genotoxic-allergen affected) site of UA + G-HRT (UV absorbed genotoxic-heavily radiation tolerated) protected stratum spinosum.

### **Clinical Implications and Recommendations**

Elderly people may often have hand-foot syndrome due to their increased comorbid disability, peripheral arterial disease, and decreased health status. In a subgroup of the elderly patients, the higher rate of medication usage may lead to the hand-foot syndrome. The decrease in health status as people age may necessitate chronic use of the medications in some diseases. As the treatment is prolonged, the number of side effects can be found more frequently. Alleviating modifiable risk factors will help prevent this condition. Healthcare professionals should provide education to improve older adults' knowledge and health behaviors. Honest and clear communication among healthcare professionals aimed at patient-centered care addresses treatment goals and possible adverse events. The elderly patients and their caregivers should know that healthcare professionals should monitor them carefully. This information may help both patients and healthcare professionals to recognize the disease at early stages so that the treatment can be administered right on time. If treatment is initiated at earlier stages, the patient's quality of life will be preserved.

The researchers aimed to inform that elderly individuals may have the side effects of the medications at different rates than middle-aged individuals. Finally, the purpose of the study was to reiterate the chronological progression with photographs of a female patient diagnosed with hand-foot syndrome. Other than those stipulated, there were no contributions to this study. Healthcare professionals should monitor the elderly individuals carefully and inform the patients and their families about the potential side effects. According to this case, the precise diagnosis of the medical team entering in a multidisciplinary patient can change the outcome of the life, quality of life, and the treatment process related to the patient. Consequently, the purpose of this article was to inform that elderly adults may have the side effects of the medications at different rates than middle-aged adults. If healthcare professionals can learn to recognize the telltale signs, then maybe advanced cases and their complications could be averted. Data about aging and the consequences of illness and treatments on mobility-related quality of life are needed to inform clinical decisions.

### **Conclusion**

The reports in the literature indicate that PUVA has been used at considerable costs and at no small inconvenience due to a serious physical and psychological isolation. In old age patients, it can turn into a deep impact, creating body and psyche problems regarding the already present ones. PUVA must also be prolonged for a long time, often indefinitely. Thanks to this case report, we conclude that intramuscular gold therapy should be re-evaluated in the old age patients, free from the side effects caused by the fact that the color concentration of the



depigmented zones contraindicates the PUVA treatment. Indeed, an early treatment of bullous erysipelas with systemic steroids can be an amazing remedy which in the years has created a light point of considerable relief for the patient. We invite therefore all the colleagues to weigh cautiously pros and cons of the utilized therapies.

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### **Competing interests**

The authors declare no conflict of interest.

### **Ethics Statement**

Not applicable.

### **Authors' contributions**

All authors shared in the conception and design and interpretation of data, drafting of the manuscript and critical revision of the case study for intellectual content and final approval of the version to be published. All authors read and approved the final manuscript.

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