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Pruritus in the elderly – a guide to assessment and management

Background

Pruritus is the most common skin complaint in patients over the age of 65 years. These patients are in a unique population group that will require a comprehensive clinical approach. The symptoms of pruritus can be potentially debilitating and can have a significant impact on elderly patients by impairing their quality of life.

Objective

This article discusses the assessment and management of pruritus, with a specific focus on the elderly population.

Discussion

Pruritus in the elderly population remains both a diagnostic and therapeutic challenge. In the first instance, it has to be established whether the pruritus is arising from a primary dermatological condition or whether it is a manifestation of an underlying systemic disease. When a rash is present it could suggest an underlying primary dermatosis. Apart from lifestyle modifications, emollients, topical antipruritics (eg menthol 1% in aqueous cream), oral antihistamines, topical corticosteroids and phototherapy may prove useful.

Keywords

skin diseases; pruritus; aging; diagnosis, differential

Pruritus is defined as an unpleasant sensation of the skin that provokes the urge to scratch. When severe, it can interfere with work, sleep and daily activities of living. Pruritus is one of the most common skin complaints in the elderly.^{1,2} Its prevalence is ever increasing with the rapid growth of the elderly population. Given its common prevalence and its potential to profoundly influence quality of life for many elderly patients, management needs to be carefully tailored and optimised to individual patients. In terms of possible aetiological mechanisms in the elderly, pruritus can be attributed to a diverse array of underlying aetiological factors, namely

dermatological, systemic, neurological and psychogenic diseases, as well as being a manifestation of an adverse cutaneous drug reaction.³ When this is considered with other variables associated with advancing age, management of pruritus often presents a diagnostic and therapeutic challenge for clinicians.

Pathogenesis

The itch sensation is mediated by epidermal/dermal receptors connected to nonmyelinated afferent C-fibres that transmit the impulse from the periphery.⁴ These impulses then continue from the peripheral nervous system through to the thalamus and primary somatosensory cortex in the central nervous system. Histamine is thought to be the primary mediator of the itch sensation, although other neurotransmitters have also been implicated.⁵

Skin changes in the elderly

Skin ageing can be considered in two broad categories; intrinsic ageing and extrinsic ageing (*Table 1*).^{6,7} Intrinsic ageing refers to changes that are a consequence of the normal ageing process and occur in all individuals. Extrinsic ageing occurs as a consequence of extrinsic factors that have a cumulative effect on the skin. The structural and physiological cutaneous changes of intrinsic ageing, combined with lifetime cumulative effects of comorbid medical disorders and multiple medications, can produce a marked susceptibility to pruritic dermatoses in elderly people.⁸

Differential diagnosis

Pruritus can be a manifestation of an underlying dermatological condition (*Table 2*)⁹ or part of an underlying systemic disease (*Table 3*).¹⁰

Approach to pruritus

The mechanism of pruritus in the elderly can often be complicated and multifactorial. When reviewing an elderly patient with pruritus, a detailed history and full physical and dermatological examination are essential. Because elderly patients may have a lack of resources, impaired cognition, depression or physical disability, they may be more prone to neglecting normal hygiene grooming processes.² This in turn can predispose them to developing pruritus.

History

The medical history should focus on:

- onset of the disease, location, character of the itch, progression and aggravating/alleviating factors
- duration of pruritus (acute: <6 weeks or chronic: >6 weeks)
- whether a rash is associated with the pruritus (is it an itch without a rash or a rash that itches?)
- whether the itching is severe enough to disrupt sleep

- whether any new medications were commenced, or the dosage of current medications altered
- whether over-the-counter products are being used
- use of any new cosmetics or creams
- history of atopy, eczema, asthma, hay fever
- a focused dietary history to investigate possible nutritional deficiencies
- environmental conditions (eg use of electric blanket, heater, hot showers, etc)
- general health and well being by way of loss of weight or appetite, mood, sleep
- exposure to any sick contacts who have febrile diseases such as rubella, mumps or varicella, suggesting a possible infectious aetiology.

Table 1. Intrinsic and extrinsic factors associated with skin ageing^{6,7}

Intrinsic ageing	Extrinsic ageing
Reduction in skin cell turnover	UV exposure
Impaired skin barrier function	Environmental pollution
Impaired immune system response	Smoking
Reduction in subcutaneous fat	Lifestyle factors (sleep, stress, diet)
Impaired thermoregulation	
Decreased vascularity	
Decreased sebaceous and sweat gland activity	
Decreased sensory perception	

Table 2. Common dermatological causes of pruritus⁹

Xerosis	This is the most common cause of pruritus in the absence of an identifiable skin lesion. It is characterised by dry, scaly skin, usually in the lower extremities.
Atopic dermatitis	Atopic dermatitis is characterised by pruritus and is defined as a chronic inflammatory skin disease commonly associated with allergic rhinitis or asthma.
Contact dermatitis	Contact dermatitis is caused by direct skin exposure to a substance (eg. poison ivy). It can be intensely pruritic.
Dermatophytes	Dermatophyte infections can cause localised pruritus with a characteristic rash of peripheral scaling and central clearing.
Lice	The pruritus is caused by a delayed hypersensitivity reaction to the saliva of the louse. These can be difficult to visualise without the use of a magnification aid.
Psoriasis	Pruritus can be present in a large number of patients with psoriasis. It may be generalised in this context and not necessarily restricted to the areas of psoriatic plaques.
Scabies	This is caused by the deposition of mite eggs within the epidermal layer of the skin. Symptoms of pruritus are often worsened at night.
Urticaria (hives)	This histamine-mediated condition is common and affects up to one quarter of the population. The lesions are well circumscribed, erythematous with an elevated wheal.

Examination

The most common cause of itchy skin in the elderly, especially in autumn and winter is xerosis or dry skin. This 'dry skin' is quite evident on skin examination, being most pronounced on the lower legs, anteriorly, but also affecting the upper limbs and back. If the itch is severe enough, secondary skin lesions can develop by way of excoriations, infection and lichenification (thickening, hyperpigmentation and enhanced skin markings) in longstanding rubbing. When examining the skin it is important to look at areas that might not normally be seen, such as finger webs, intertriginous regions and the genital areas. The presence of a rash should raise the suspicion of an underlying primary dermatosis. Localised pruritus in a dermatomal distribution without associated cutaneous changes or with only secondary cutaneous changes from scratching suggests neuropathic pruritus.³ When patients have an excessive impulse to scratch or pick at normal skin, it may be a sign of psychogenic pruritus, which manifests mostly in accessible sites such as the upper limbs and upper trunk. Examination should also look for possible secondary causes. Organomegaly (liver, spleen), which increases the likelihood of an underlying systemic disease, should be assessed. Lymph nodes should be palpated in the rare cases of lymphoma presenting with pruritus.

Investigations

It is reasonable to order a full blood count, renal, liver, fasting glucose and thyroid function studies

in the first instance. A full blood count can be helpful in evaluation of haematological disorders such as leukaemias, anaemias and polycythaemia. Renal and liver function studies can evaluate evidence of renal or hepatic dysfunction. Abnormalities in liver function studies could also be related to infections, or drug-related, alcoholic or inflammatory hepatitis. Given the association with neoplasms, all patients should have up-to-

date age-appropriate cancer screenings. A biopsy in the absence of any visible skin disease is unlikely to be helpful.

Management

Management can range from lifestyle modifications to specific medications. General measures that can be instituted without much difficulty include:

- quick, cool showers (<2–3 minutes)
- soap-free substitutes in the shower
- patting dry skin (hence avoiding vigorous rubbing)
- liberal use of emollients on damp skin, after the shower (preferably out of a tub or jar rather than a pump).
- avoiding excessive heating in winter
- using a humidifier if possible to enhance ambient indoor humidity (humidifying to at least 40%), especially in dry, cold winter months.
- avoiding use of electric blankets in bed
- minimising direct contact with woollen and synthetics garments
- keeping fingernails trimmed short to minimise complications from scratching (eg. secondary bacterial infection)

Recent medication changes that are suspected of causing pruritus should be rationalised. If response to the measures listed above is not satisfactory then a stepwise treatment approach can be trialled. Regular use of emollients is the mainstay of treatment in pruritus, aiming to ensure optimal skin hydration and preventing the itch-scratch cycle. Emollients enhance the skin barrier function, preventing transepidermal water loss and entry of irritants.⁷ For patients with predominant urticarial symptoms a trial of antihistamines may be worthwhile. Topical treatments include antipruritics such as menthol 1% in aqueous cream. Topical corticosteroids can prove effective in managing pruritus, especially when related to an underlying inflammatory or immunological condition. Topical corticosteroids are thought to be effective secondary to their anti-inflammatory properties. In some patients phototherapy may be useful. When all of these options fail, a referral to a specialist for an opinion may be indicated.

Key points

- Pruritus in the elderly can be multifactorial in its aetiology.
- Prompt identification of exacerbating or causative factors may allow prompt management strategies.
- Early treatment options include lifestyle modifications, emollients and topical treatments.

Table 3. Common systemic causes of pruritus	
Neoplastic/malignant diseases	<ul style="list-style-type: none"> • Lymphomas (especially Hodgkin’s disease, seen in 30% of cases) • Leukaemias (especially chronic lymphatic leukaemia) • Any type of disseminated cancer and multiple myeloma
Renal impairment/failure	<ul style="list-style-type: none"> • Chronic renal failure <ul style="list-style-type: none"> • >50% of patients with chronic renal failure and 80% of patients on dialysis have pruritus
Liver disease/hepatic failure	<ul style="list-style-type: none"> • Cholestasis from any cause including <ul style="list-style-type: none"> • primary biliary cirrhosis • sclerosing cholangitis • viral hepatitis • drug-induced cholestasis
Medications	<ul style="list-style-type: none"> • Diuretics • Lipid-lowering agents • Angiotensin converting enzyme inhibitors • Anticonvulsants • Allopurinol
Haematological disorders	<ul style="list-style-type: none"> • Polycythaemia vera • Iron-deficiency anaemia • Macroglobulinaemia
Endocrine disorders	<ul style="list-style-type: none"> • Hypothyroidism • Hyperthyroidism • Hyperparathyroidism
Tropical diseases	<ul style="list-style-type: none"> • Various parasites
Psychiatric illness/disorders	<ul style="list-style-type: none"> • Stress, anxiety • Depression • Phobic disorders (eg. parasitophobia) • Obsessive compulsive disorder • Hypochondriasis
Neurological disorders	<ul style="list-style-type: none"> • Cerebral infarct • Brain abscess • Multiple sclerosis • Brain tumours
Infection	<ul style="list-style-type: none"> • HIV
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