

Introduction

Itch (also known as pruritus) results in a desire to scratch or rub the affected area.

[Picture Credit: Pruritus]

When one constantly scratches or rubs the skin, damage to the surface layer of the skin could cause a break in the protective layer of the skin resulting in skin infections. There are local and systemic causes of itching. Cancer itself or cancer treatment modalities is another possible cause of pruritus.



Rowe, B. & Yosipovitch, G. 2016.

“Malignancy-associated pruritus can be the result of a neoplasm's local effect on tissue or due to the systemic reaction to malignancy. A systemic reaction to malignancy has been termed 'paraneoplastic itch' and can be the first sign of an underlying malignancy. Paraneoplastic itch is most commonly caused by lymphoproliferative malignancies, and severity of itch correlates with stage of disease in Hodgkin's lymphoma and polycythemia vera. Non-melanoma skin cancer is the most common type of malignancy-associated pruritus, and recent data indicate that pruritus is associated with more than one-third of non-melanoma skin cancers. Cutaneous T-cell lymphomas (CTCL), particularly more advanced stages, cause intractable pruritus and recent investigations into the pathophysiology of CTCL-associated itch have implicated cytokine interleukin-31 as a putative mediator. Treatments that reduce itch in CTCL patients, such as histone deacetylase inhibitors (HDACi), Mogamulizumab, a novel monoclonal antibody against chemokine receptor type-4, and oral corticosteroids, have demonstrated a correlation between their anti-pruritic effect and reduced serum levels of interleukin-31.”

Naveed, S., Thappa, D.M., Dubashi, B., Pandiatcharam, J., Munisamy, M. & Singh, N. 2019.

BACKGROUND: With the introduction of newer anti-cancer agents, the adverse effects have become more rampant which call for concern in the treatment of patients with cancer. Hence, the assessment and management of dermatological adverse effects of anti-cancer therapy have

become a significant part of the care of patients with cancer and require proper and close collaboration between the dermatologists and the oncologists.

AIMS: To assess the frequency and pattern of mucocutaneous adverse reactions to cancer chemotherapy and chemoradiation and grade them according to their severity and to identify hematological and biochemical changes related to cancer chemotherapy-induced mucocutaneous adverse reactions.

MATERIALS AND METHODS: This was a descriptive study done among 226 patients in an Indian tertiary care hospital, who presented with mucocutaneous adverse reactions to either chemotherapy alone or combination of chemotherapy and radiation to dermatology, medical oncology and radiotherapy outpatient departments. Detailed history and examination were undertaken. Visual analog score (VAS) was employed to quantify pain and pruritus. Correlation of various biochemical and hematological parameters with chemotherapy-induced adverse reactions was attempted and grading of adverse reactions was done based on the severity scale of Common Terminology Criteria for Adverse Events (CTCAE).

RESULTS: The common cutaneous adverse reactions observed in our study were nail changes (194 patients; 85.84%), followed by skin changes (191; 84.51%), hair changes (159, 70.35%), mucosal changes (34, 15.04%), and other miscellaneous manifestations. Grade 1 manifestations comprised of 49.91% of total manifestations followed by Grade 2 (45.45%) and Grade 3 (5.64%). In addition to bleomycin, other chemotherapeutic agents also had been shown to produce flagellate dermatitis in our study.

CONCLUSION: Nail changes, skin changes, hair changes and mucosal changes occurred frequently as a significant side effect of chemotherapy, which a physician should be aware of, while selecting a chemotherapeutic drug.

Vallely, J.J., Hudson, K.E., Locke, S.C., Wolf, S.P., Samsa, G.P., Abernethy, A.P. & LeBlanc, T.W.
2019.

PURPOSE: Pruritus is a common symptom in cutaneous malignancies, but its impact on patients with solid tumors is unclear. We explored the impact and management of pruritus in patients with solid tumors, using patient-reported outcomes (PRO) data from a real-world registry.

METHODS: From 2006 to 2011, patients seen in the Duke Cancer Institute reported their symptoms via the Patient Care Monitor v2.0, a validated PRO tool that includes a 0-10-point question about pruritus severity. From > 25,000 encounters, 203 patients reported severe pruritus (> 6/10) on at least one visit and 506 total visits were abstracted where patients reported either moderate or severe pruritus (> 3/10). From this cohort, we abstracted demographics, diagnosis, stage, cancer therapy, anti-pruritic therapy, and clinicians' responses.

RESULTS: Mean age was 59.8 (SD 13.3), 134 (66%) were female, 125 (62%) were Caucasian, and 65 (32%) were African American. Breast cancer was the most common tumor (36.5%), followed by lung cancer (23.2%). Mean pruritus severity score was 6.8 (SD 1.8) for patients on chemotherapy, 6.9 (SD 1.8) for patients on targeted therapy alone or in combination, and 7.1(SD 1.8) for patients off treatment. Overall, 67% of patients reported at least two episodes of moderate-severe pruritus (mean # of visits 4.2 (SD 2.7)). Despite frequent report of severe and persistent pruritus, this was mentioned in just 28% of clinician notes and an intervention was recommended/prescribed in only 7% of visits.

CONCLUSIONS: Pruritus is an under-addressed symptom in patients with solid tumors. Additional research is needed to understand the burden of pruritus in affected populations.

Major Causes of Pruritus

According to the experts, some of the systemic causes of pruritus include:

- Cancer. The following cancers have been associated with pruritus:
 - basal cell carcinoma of the skin
 - squamous cell carcinoma of the skin
 - malignant melanoma
 - lymphoma
 - leukaemia
 - skin rash associated with ovarian cancer
 - pancreatic cancer
 - breast cancer
 - liver cancer
 - lung cancer
 - ovarian cancer
- Infections, e.g. HIV/Aids
- Infestations, e.g. parasites. Examples of parasites include:
 - stomach and gut worms (threadworm, hookworm)
 - skin mites (scabies)
 - hair and body lice (head lice and crab lice)
 - protozoa (Giardia)
- Inability of the body to rid itself of toxins, e.g. chronic kidney disease and obstruction of the flow of bile causing a build-up of bile in the blood.
- Endocrine problems, e.g. underactive parathyroid glands (hypoparathyroidism), overactive thyroid gland (hyperthyroidism), and diabetes.

Other causes of pruritus may include:

- Dryness of the skin
- Skin conditions and rashes
- Irritation of the skin
- Allergies
- Reaction to certain drugs

Larson, V.A., Tang, O., Ständer, S., Kang, S. & Kwatra, S.G. 1029.

BACKGROUND: Pruritus has been associated with cancer. However, limited data are available on the types of underlying malignancies associated with pruritus.

OBJECTIVE: We sought to characterize the association between pruritus and different cancer types, as well as variations by racial group.

METHODS: Cross-sectional study of patients ≥ 18 years of age seen at the Johns Hopkins Health System during 2013-2017. Patients with pruritus were compared with patients without pruritus. Analyses were stratified by race.

RESULTS: Patients with pruritus were more likely to have concomitant malignancy than those without pruritus (odds ratio 5.76, 95% confidence interval 5.53-6.00). Most strongly associated were cancers of the liver, gallbladder and biliary tract, hematopoietic system, and skin. Compared

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with white patients, black patients more frequently had soft tissue, dermatologic, and hematologic malignancies and less frequently had liver, respiratory, gastrointestinal, and gynecologic malignancies.

LIMITATIONS: The cross-sectional design precludes analysis of the temporal association between pruritus and malignancy. The study is limited to a single tertiary care center.

CONCLUSION: Pruritus is most strongly associated with cancers of the liver, skin, and hematopoietic system. Black patients with pruritus have a higher likelihood of skin, soft tissue, and hematologic malignancies than white patients, while whites have higher likelihoods of liver, respiratory, gastrointestinal, and gynecologic malignancies.

Assessment of Pruritus of Unknown Cause

Pruritus is a symptom, not a diagnosis or disease. Generalised pruritus should be investigated because of its strong medical significance. Assessment of pruritus consists of the following:

- Obtaining a complete history, e.g. location, onset, duration, etc
- Complete physical examination of the skin with particular attention to affected areas
- Laboratory investigations, including:
 - complete blood count
 - renal function (blood urea nitrogen, serum creatinine).
 - Liver function
 - lactate dehydrogenase determination
 - thyroid function
 - parathyroid function
 - skin biopsy
 - HIV screening.

Cho, S.I., Lee, J., Lim, J., Park, J.S., Kim, M., Kim, T.A.Y., Kin, T.M., Lee, K.H., Keam, B., Han, S.W. & Jo, S.J. 2019.

“Pruritus is a very common symptom in patients, undergoing targeted anticancer therapy. However, the characteristics of pruritus, according to the targeted anticancer agents, are still unclear. The objective of this study was to determine the characteristics of pruritus, induced by targeted anticancer agents, using a questionnaire-based survey. The survey was administered to cancer patients currently receiving anticancer agents. Medical records were also reviewed. A total of 374 cancer patients completed the survey, of which 108 were treated with the targeted therapy. A total of 205 patients had pruritus, of which 66 were under the targeted therapy. Epidermal growth factor receptor inhibitor (EGFRI) users showed the highest prevalence rate of itching and numeric rating scale score for itching. The 5-D itch score was also highest among users of EGFRI. In conclusion, patients receiving EGFRI suffer from severe pruritus frequently. They not only experienced long lasting and intense itching, causing sleep discomfort, but also developed itching at specific body sites.”

Treatment of Pruritus

Treatment of pruritus includes:

- Prevention of causative factors
- Elimination of causative factors

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- Preventing aggravating factors:
 - maintaining fluid balance
 - scents, fragrances, and perfumes
 - underarm deodorants
 - antiperspirants
 - topical preparations containing scents, dyes, or preservatives
 - emotional stress

Factors that could alleviate pruritus:

- using only unscented emollient creams or ointments
- bathing in tepid water
- using mild skin cleansers (e.g., non-soap)
- using soap only for dirty areas; otherwise, water is sufficient
- maintaining a humid environment (e.g., using a humidifier)
- wearing loose-fitting clothing and clothing made of cotton or other soft fabrics
- using distraction, relaxation, positive imagery, or cutaneous stimulation
- using on-irritant topical products including over-the-counter as well as prescription products using systemic therapies prescribed by one's doctor

Sheriff, T., Lin, M.J., Dubin, D. & Khorasani, H. 2019.

“Cannabis is increasingly being used world-wide to treat a variety of dermatological conditions. Medicinal cannabis is currently legalized in Canada, 31 states in America and 19 countries in Europe. The authors reviewed the literature on the pharmacology and use of cannabinoids in treating a variety of skin conditions including acne, atopic dermatitis, psoriasis, skin cancer, pruritus, and pain. Cannabinoids have demonstrated anti-inflammatory, antipruritic, anti-ageing, and antimalignancy properties by various mechanisms including interacting with the newly found endocannabinoid system of the skin thereby providing a promising alternative to traditional treatments.”

Medical Disclaimer

This Fact Sheet is intended to provide general information only and, as such, should not be considered as a substitute for advice, medically or otherwise, covering any specific condition or situation. Readers of this document should seek appropriate medical advice prior to taking or refraining from taking any action resulting from the contents of this Fact Sheet. As far as permissible by South African law, the Cancer Association of South Africa (CASNA) accepts no responsibility or liability to any person (or his/her dependants/estate/heirs) as a result of using any information contained in this Fact Sheet.

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