

13961

**Skin cancer screening education initiatives for primary care providers**



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Primary care physicians (PCPs) are often the first line of defense against morbidity and mortality due to skin conditions. However, PCPs frequently have not received a comprehensive training in skin conditions which may lead to reduced diagnostic accuracy compared with dermatologists, excessive tests, and too many or not enough specialist referrals. Educational interventions aimed at skin cancer screening instruction for PCPs could lead to detection of skin cancer at earlier stages and subsequent improved morbidity and mortality. A scoping literature review was conducted to collect data about all reported skin cancer screening interventions for PCPs. Thirty-nine interventions were identified, with 25 successful interventions out of 34 analyzed interventions (73.5%), however only 50% of interventions that underwent biopsy review or referral analysis showed positively altered clinical practice. No significant differences were found between nature of intervention, use of dermoscopy, length of intervention, or style of teaching. Evident intervention success in clinical practice was significantly less likely to be achieved than knowledge exam success ( $P = .0093$ ). This review highlights that quality of educational interventions is highly variable. A standardized and validated educational program should be developed to ensure clinically successful skin cancer screening interventions.

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13988

**Large trichilemmal carcinoma of the scalp in a patient with Muir-Torre syndrome**



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A 38-year-old man presented to the emergency room with a pink, friable, rapidly growing exophytic mass measuring 5.0 cm  $\times$  1.5 cm on his posterior scalp. On physical exam, he had numerous yellow, waxy papules some with central umbilications scattered over his face, neck, and shoulders. Medical history was significant for seizures, opioid dependence and tobacco use. His father had similar skin lesions but, unfortunately they became estranged over the years and passed away from an unknown type of malignancy. Biopsy of the scalp mass was deferred to otolaryngology, however biopsies of two shoulder papules showed sebaceous adenomas consisting of mature, benign appearing sebocytes rimmed by a palisade of basaloid appearing cells. Based on the clinical picture and biopsy results, Muir-Torre syndrome was suspected. Before surgery, a PET scan showed metabolic activity at the scalp mass, as well as focal areas in the neck, left pre-auricular cheek, right shoulder, and right thigh. Otolaryngology excised the scalp mass with wide margins. A bilateral modified radical neck dissection (levels I-V) biopsying eight lymph nodes was performed and the pre-auricular lesion was removed, all of which were negative for malignancy. Histology of the scalp mass showed invasive moderately differentiated keratinizing adnexal carcinoma consistent with trichilemmal carcinoma. Immunohistochemistry of the mass was negative for MSH-2/MSH-6 but was positive for PMS2/MLH-1, which makes this the second report of trichilemmal carcinoma in a patient with Muir-Torre syndrome. Following surgery, the patient was referred to gastroenterology since Muir-Torre syndrome has an increased risk of internal malignancies.

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13999

**Pemphigus and diabetes mellitus: Systematic review and meta-analysis**



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Background: Pemphigus encompasses a group of debilitating autoimmune blistering disorders characterized by IgG autoantibodies against desmosomal adhesion molecules, resulting in intraepidermal blisters of the skin and mucosal surfaces. Given its autoimmune etiology and chronicity, it has been suggested that pemphigus may be associated with other autoimmune conditions and metabolic syndrome-related comorbidities. We aimed to assess the association of pemphigus with type 1 (T1DM) and type 2 diabetes mellitus (T2DM).

Objective: To perform a systematic review and meta-analysis to assess the association between pemphigus and T1DM and T2DM.

Methods: A systematic review and meta-analysis was performed according to PRISMA guidelines.

Results: A total of 237 references were identified through electronic database searches. After exclusion of duplicate or irrelevant references, a total of 5 studies were included for meta-analysis. Meta-analysis demonstrated a significant association between pemphigus and type 2 diabetes mellitus (OR 2.32, 95% CI 1.24-4.33,  $P = .008$ ) with significant heterogeneity ( $I^2 = 93\%$ ). We found no association between pemphigus and type 1 diabetes mellitus (OR 1.88, 95% CI 0.38-9.4,  $P = .33$ ), with heterogeneity ( $I^2 = 71\%$ ).

Conclusions: In summary, the available evidence demonstrates patients with pemphigus are significantly more likely to have T2DM but not T1DM. As part of pemphigus investigations and surveillance, investigating for these conditions may be considered.

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14002

**Association between pemphigus and psoriasis: Systematic review and meta-analysis**



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Background: Pemphigus is an autoimmune blistering disorders that is associated with painful blisters and mucous membranes. It is characterized by IgG autoantibodies against desmosomal adhesion molecules, resulting in intraepidermal blisters of the skin and mucosal surfaces. There have been several case reports demonstrating the coexistence of psoriasis and pemphigus, but whether an association exists or not remains unclear.

Objective: To perform a systematic review and meta-analysis to assess the association between pemphigus and psoriasis.

Methods: A systematic review and meta-analysis was performed according to PRISMA guidelines. Odds ratio (OR) with 95% confidence interval (CI) was used as the effect size.

Results: We identified 4 studies which were pooled for meta-analysis. We found a significant association between pemphigus and psoriasis (OR 2.64, 95% CI 1.24-5.59,  $P = .01$ ), with heterogeneity ( $I^2 = 94\%$ ).

Conclusions: We found a significant association between pemphigus and psoriasis. Clinicians caring for patients with pemphigus should be aware of this association. Further research is required to elucidate the molecular mechanism underlying this association.

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