Editorial

Nature of the Beast

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Actinic keratoses (AKs), also known as solar keratoses, are proliferations of transformed, neoplastic keratinocytes that are confined to the epidermis and induced by exposure to UV radiation in sunlight.[1] AKs currently affect more than 5 million Americans and have been a focus of attention and argument over the past several years.[1] Highlights have included the debate over their biology and malignant potential, the question of appropriate insurance coverage, and the development of an array of potential new therapies.

AKs have historically been classified as precancerous or premalignant lesions. However, studies have shown that up to 60% of squamous cell carcinomas (SCCs) begin as AKs and that there is histologic evidence of contiguous AK in 97% of SCC lesions that arise in sun-damaged skin.[2,3] The likelihood of a fully developed SCC evolving from a given AK has been estimated to occur at a rate of 0.075% to 0.096% per lesion per year.[2] Therefore, an affected individual with an average of 7.7 AKs on the skin would expect to develop SCC at a rate of 10.2% over 10 years.[4] Some authors have proposed a new nomenclature that would more suitably reflect the nature of this early malignant process. Suggested terminology includes *keratinocytic intraepidermal neoplasia* or *solar keratotic intraepidermal squamous cell carcinoma*.[1]

The increasing amount of literature supporting the malignant nature of AKs and the need for appropriate therapy has contributed to a gradual change in the perception of these lesions by insurers.[1] Medicare changed its policy regarding AKs in July 2001. Although governmental agencies including Medicare still refer to AKs as precancerous lesions, they reversed, for the most part, their 1998–1999 policy, which had restricted their treatment. Therefore, we have more freedom to treat these lesions with the frequency and the methods deemed necessary.

We have seen the introduction and investigation of varied therapeutic options for the treatment of AKs, which now join our traditional mainstays of cryotherapy and topical fluorouracil 5%. In this annual skin cancer issue of *Cutis*, we present a special focus on AKs, with 3 reviews on the current state of therapy, both traditional and emerging. A 2-part article by Tutrone et al[5,6] reviews topical therapies for these lesions, including the mainstay topical fluorouracil 5% and newer therapies such as diclofenac sodium, imiquimod 5%, and a novel topical fluorouracil 0.5% formulation. Yu et al[7] review the nontopical therapies, including cryotherapy, photodynamic therapy, chemical peels, dermabrasion, and laser treatment of AKs.

Despite all of these therapies, awareness, education, and prevention are the best options. I would like to commend the American Academy of Dermatology (AAD) in partnership with 3M Pharmaceuticals, for the development and institution of the Actinic Keratosis Disease Awareness Program. Now in its third year, the campaign is an integrated program that includes skin cancer screenings, satellite media tours, community health lectures, a video news release, and radio public service announcements. One of the most intriguing aspects of the program is ActinicKeratosisNet, an online information source located on the AAD Web site, where individuals can obtain general information on AKs, including statistics, symptoms, prevention tips, and treatment options.

The term *dynamism* is apt to summarize the current state of our approach to AKs. We have an evolving understanding of the malignant, rather than premalignant, nature of these lesions; new therapies with novel mechanisms; and increased awareness among medical professionals, the public, and lawmakers. We just have to keep up the good work.

Dr. Weinberg has conducted clinical research and serves on the speakers bureau for 3M Pharmaceuticals.

REFERENCES

1. Fu W, Cockerell CJ. The actinic (solar) keratosis: a 21st-century perspective. *Arch Dermatol*. 2003;139:66-70.
2. Marks R, Renne G, Selwood TS. Malignant transformation of solar keratosis to squamous cell carcinoma. *Lancet*. 1988;1:795-797.
3. Hurwitz RM, Monger LE. Solar keratosis: an evolving squamous cell carcinoma. benign or malignant? [letter]. *Dermatol Surg*. 1995;21:184.
4. Dodson JM, DeSpain J, Hewett JE, et al. Malignant transformation of actinic keratosis and the controversy over treatment: a patient-oriented perspective. *Arch Dermatol*. 1991;127:1029-1031.
5. Tutrone WD, Saini R, Caglar S, et al. Topical therapy for actinic keratoses: 5-fluorouracil and imiquimod. *Cutis*. 2003;71:365-370.
6. Tutrone WD, Saini R, Caglar S, et al. Topical therapy for actinic keratoses: diclofenac, colchicine, and retinoids. *Cutis*. 2003;71:373-379.
7. Yu TC, Rahman Z, Ross BS. Actinic keratoses: surgical and physical therapeutic modalities. *Cutis*. 2003;71:381-384.