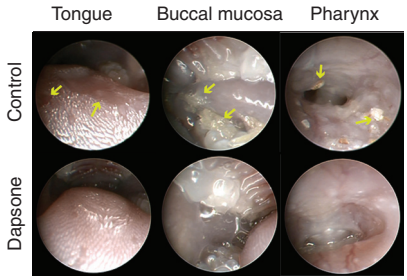
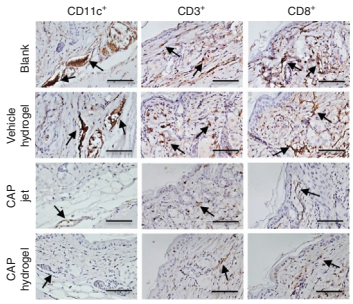
Dapsone Inhibits Neutrophils in Murine Blistering Disease Models



The antibiotic dapsone is used to treat the pemphigoid diseases epidermolysis bullosa acquisita and mucous membrane pemphigoid despite its modest effects and its uncertain mode of action. Employing antibody transfer mouse models to mimic these diseases, Murthy et al. found that dapsone attenuated antibody-induced neutrophil-mediated skin and mucosal inflammation in these mice via inhibition of neutrophil responses to fixed immune complexes and anaphylatoxin C5a. Specifically, dapsone affected the release of leukotriene B_4, ROS, matrix metalloproteinase 9, and MPO in response to immune complex stimulation. Although these findings are in murine models, the results support further investigation of the identified players in pathogenesis of these pemphigoid diseases and the potential effects of dapsone on them in patients. ***See page 2587.***

Cold Atmospheric Plasma Promotes Repigmentation in Vitiligo



Treatment of vitiligo features incomplete responses and high recurrence rates. Because cold atmospheric plasma (CAP), an electrical discharge of plasma generated in open air that generates low-level ROS, is reportedly beneficial for chronic wounds, actinic keratoses, and skin cancers, Zhai et al. examined the effects of CAP on vitiligo. In both mice and patients, CAP jet generated in flowing helium and CAP-activated hydrogel improved vitiligo lesions. In mice, CAP reduced inflammatory cell infiltration by dendritic cells, $CD3^+$ T cells, and $CD8^+$ T cells. It also reduced production of the inflammatory mediators CXCL10, IFN-γ, and HIF-1α, and it activated antioxidant stress responses. Because CAP-based therapies resulted in improvement of disease without subsequent depigmentation or side effects, CAP may offer promise as a therapeutic modality for vitiligo. ***See page 2710.***

Sequencing of Skin Tags Reveals Driver Gene Mutations

Skin tags are very common benign tumors that occur with aging, but their pathogenesis is not understood. Aoki et al. performed whole-exome sequencing of individual skin tags from a single patient and identified 20 different somatic mutations. There were no common mutations, but individual skin tags had single mutations in *FGFR3*, *HRAS*, and *KRAS* that are known to cause seborrheic keratoses. Single lesion-specific somatic mutations were also identified in *FGFR3*, *HRAS*, *KRAS*, or *EGFR* in 30 of 32 skin tags from 10 additional participants, whereas another participant had a tumor with a single mutation in *PIK3CA*. These findings suggest that development of skin tags results from somatic driver mutations in *HRAS*, *KRAS*, *PIK3CA*, *EGFR*, or *FGFR3* in keratinocytes. ***See page 2760.***

Steady Increase Observed for Merkel Cell Carcinoma

In an international study, Olsen et al. reported significant increases in the incidence of the rare but highly aggressive cutaneous neoplasm Merkel cell carcinoma (MCC). Based on Joinpoint regression models, analysis of cases in the United States, Australia, New Zealand, Scotland, and Norway from 1997 to 2016 revealed steady increases in MCC incidence of approximately 2–4% per year across low and high ambient UVR exposure levels. MCC increased in both men and women. In the United States, MCC of the head and neck and MCC of the extremities both increased, and these increases were also observed in both men and women. ***See page 2596.***

Risk Factors Associated with Infantile Hemangioma in Japan

Mizawa et al. examined the incidence and environmental risk factors for infantile hemangioma, the most common infant vascular tumor. Analysis of 85,244 mother–infant pairs from the Japan Environment and Children's Study indicated an incidence of infantile hemangioma at 1 year of age of 0.72%. These studies also revealed that this incidence was related to maternal lifetime incidence of pollinosis, male child, gestational age, use of reproductive medicine, allergic conjunctivitis, and having more than 16 years of education. This incidence was similar to other reports of infantile hemangioma incidence in Japan (0.78%), and further studies are needed to explore the importance of these risk factors. ***See page 2745.***

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