Staphylococcus aureus Colonization in Bullous Pemphigoid

Broad-based immunosuppression and/or other immunomodulatory agents are the primary treatments for the autoimmune blistering disease bullous pemphigoid (BP), which is characterized by autoantibodies to the epidermal attachment proteins BP180 and BP230. Such therapies can result in increased infections. Messingham et al. showed that most patients with BP were colonized with Staphylococcus aureus that produces toxic shock syndrome toxin 1, even in the presence of neutralizing antibodies against this factor. In support of this finding, clinical case reports described an early implementation of antibiotics in patients with BP to mitigate the bacterial complications, including S. aureus colonization, after immunosuppression. See page 1030.

Dynamic Optical Coherence Tomography for Visualization of Nailfold Microvasculature in Systemic Sclerosis

Dynamic optical coherence tomography (D-OCT) enables the visualization of flow within the cutaneous microvasculature, and previous studies described nailfold D-OCT changes in patients with systemic sclerosis (SSc). Abignano et al. conducted a case-controlled pilot study on 40 patients with SSc to compare D-OCT with the gold-standard imaging technique nailfold video capillaroscopy (NVC). D-OCT was comparable with NVC with respect to qualitative pattern classification and quantitation. Microvascular flow density and NVC scores were correlated. This study found that D-OCT had excellent intraobserver and interobserver reliability, supporting the use of this imaging technique as a surrogate measurement for vasculopathy. D-OCT may offer another standardized imaging technique to provide quantitative outcomes for clinical trials and patient care. When used together with NVC, D-OCT may offer additional information regarding the nailfold as well as other areas of skin in patients with SSc. See page 1048.

Melanocytes Actively Contribute to Vitiligo Pathogenesis

Vitiligo was previously thought to result from a type-1 immune response, but recent studies have shown the involvement of T helper (Th) 2 and Th17 immune responses in the pathogenic loss of melanocytes that characterizes this skin depigmentation disease. Martins et al. reported that activated T cells produce cytokines that are characteristic of both type-1 and type-2 immune responses in vitiligo perilesional skin. Melanocytes responded to these soluble T-cell factors by increasing their mitochondrial metabolism and ROS levels. These results describe a complex immune response in vitiligo skin and suggest that melanocytes play an active role in disease pathology in response to the T-cell environment. Inhibition of Jak1/2 signaling prevented T-cell proinflammatory effects on keratinocytes and melanocytes, indicating a potential clinical utility in vitiligo treatment. See pages 1192.

Timing of Rituximab Response Critical for Clinical Treatment of Pemphigus

Tovanabutra et al. examined the temporal outcomes of rituximab therapy in patients with pemphigus vulgaris. After a single cycle of rituximab, 32.4% of patients exhibited complete remission off oral systemic therapy at 12 months, whereas 43.1% of patients treated with multiple rituximab cycles exhibited complete response off oral therapy at 36 months. A reduction in desmoglein 3 ELISA titers by >90.7% after 3–9 months, an average titer of ≤130 RU/ml during this time frame, or an absent titer after 6–9 months were predictive of a complete response off systemic therapy. These temporal results offer insights into outcome expectations for patients treated with rituximab for pemphigus. See pages 1056.

Gene Expression Changes Primarily Occur in the Dermis in Pyoderma Gangrenosum

Ortega-Loayza et al. examined the gene expression patterns in perilesional and nonlesional skin from patients with pyoderma gangrenosum (PG), a condition that involves painful ulcers and is treated with systemic anti-inflammatory agents. Perilesional dermis revealed gene expression changes concomitant with inflammation, whereas perilesional epidermis exhibited alterations of a few inflammatory genes or pathways. Gene expression signatures implicated neutrophil and dendritic cell interactions in PG pathogenesis. These studies support single-cell RNA sequencing studies to illuminate additional details of the molecular pathogenesis to ultimately inform new therapeutic modalities for PG and possibly other inflammatory skin diseases. See pages 1215.