Evaluation of Pyoderma Gangenousum Diagnosis Criteria

Pyoderma gangenousum (PG), an inflammatory neutrophilic dermatosis characterized by chronic ulcers, presents a diagnostic challenge owing to a lack of validated clinical criteria, laboratory tests, and histopathological markers. Three frameworks for diagnostic criteria (Su, PARACELSUS, and Delphi) have been described but remain unproven. In a single-site comparison of these diagnostic criteria in a PG cohort, Haag et al. found that the PARACELSUS framework identified the highest proportion (89%) of patients with PG, whereas the Su and Delphi frameworks identified 74% of patients with PG. The concordance among the frameworks was 72%, suggesting that these are all useful tools albeit with limitations. Because these frameworks differ with respect to the delineation of major and minor criteria, collaborative efforts are needed to refine the criteria and improve the utility of these tools. See page 59.

Selective Retinoic Acid Inhibitor Protects Skin Barrier

Although retinoid-based drugs are used to treat numerous skin diseases, including congenital ichthyoses, Darier disease, acne, and psoriasis, these medications lead to adverse reactions owing to their wide-ranging biological effects. Veit et al. examined the effects of the selective retinoic acid (RA) metabolism blocking agent DX314, which selectively inhibits the RA-metabolizing enzyme CYP26B1. On the basis of the specificity of the mode of action, DX314 potentiated the effects of all-trans-RA (ATRA) by inhibiting ATRA metabolism without noticeable off-target effects. DX314 also protected epidermal barrier integrity, which is often disrupted in keratinization disorders, highlighting the potential of this selective inhibitor for the treatment of these skin diseases. See page 72.

T Cells Persist in Vitiligo Lesions despite Jak Inhibition

Current vitiligo treatment modalities, including immunosuppressants, phototherapy, and Jak inhibitors, are often associated with rapid disease relapse after discontinuation. Previous studies implicated lesional autoreactive resident memory T cells in vitiligo relapse. Following studies in mouse vitiligo prevention and reversal models, Azzolino et al. reported that the Jak inhibitors tofacitinib and ruxolitinib both decreased vitiligo scores in these mice but that these inhibitors did not decrease the numbers of premelanosome protein–specific T cells or resident memory T cells in the epidermis. These findings suggest that these drugs inhibit T-cell function but not T-cell numbers, potentially contributing to relapse after withdrawal of the inhibitors. See page 182.

Room for Improvement in Systematic Reviews in Dermatology

Smires et al. found that the methods and reporting of only 6% of 140 randomly sampled systematic reviews (SRs) published in dermatology in 2017 had a MeaSurement Tool to Assess SRs 2 rating of moderate to high confidence and that half reported two thirds of the Preferred Reporting Items for SRs and Meta-Analyses (PRISMA) checklist items. Publication in a journal with mandatory PRISMA and higher journal impact factors were associated with moderate to high confidence in the SR results. Improvement of the quality and reporting of SRs, perhaps through a consensus for minimal SR criteria, is therefore warranted because SRs inform decision making by clinicians, guideline authors, and public health professionals. See page 64.

Type 1 Regulatory T Cells Increased in Graft-Versus-Host Disease

Type 1 regulatory T cells (Tr1s), which express CD49b and LAG3, secrete high amounts of IL-10 and possess immunosuppressive functions. These cells are more commonly found in the recipients of allogeneic hematopoietic stem cell transplantation (AHSCT) with persistent mixed chimerism. Talvard-Balland et al. found that the frequencies of Tr1s were higher in AHSCT recipients with active chronic graft-versus-host disease (cGVHD) than in those without cGVHD or with cGVHD in remission. Conversely, the frequencies of thymus-derived regulatory T cells (tTregs) were comparatively lower in AHSCT recipients with active cGVHD. Following IL-2 treatment, three patients with active cGVHD exhibited partial remission concomitant with decreased Tr1s and increased Tregs, providing insights into the roles of Tr1s in human cGVHD. See page 195.