

# The Future of Psoriasis Care

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Psoriasis research and treatment have come a long way in the past 2 to 3 decades. With the advent of biologic therapy, increasingly more targeted therapies, and a better pathophysiological understanding, our treatment paradigms and ability to treat psoriatic disease have shown great improvement; however, despite these advances, there remain several areas in need of further development to continue to improve our care of patients with psoriasis, including comorbidities, access to care, technology, and clinical care.

## Treatment Implications of Comorbidities

It has become increasingly clear that psoriasis carries with it numerous medical and psychiatric comorbidities; however, our ability to utilize these factors in treatment decision-making is still nascent. Clinically, multiple studies have demonstrated a connection between cardiovascular disease (CVD) and psoriasis, often with a direct relationship between CVD and psoriasis severity.<sup>1-3</sup> The cytokines involved (interleukin [IL]-17) and cell types (primarily neutrophils) are the same in psoriatic disease and evolving atherosclerotic plaques.<sup>4,5</sup> In contrast, other analyses do not support a relationship between CVD and psoriasis, and there has been no direct and definitive demonstration that giving patients a specific psoriasis treatment could help reduce cardiovascular risk. Perhaps this is due to the sample sizes and time needed to demonstrate such a connection, as we are dealing with fairly rare events overall. Strategies to identify patients at risk for cardiovascular events, such as starting from a cohort with existing CVD and investigating treatment effects in that population, may yield worthwhile dividends. Perhaps one day we will be able to offer treatments that not only help clear psoriasis but also modulate cardiovascular health.

Our understanding of the psychiatric effects of psoriasis is even less developed. The strongest links have been demonstrated between psoriasis and depression, anxiety,

and suicidal ideation.<sup>6</sup> Some of these connections have been recognized for more than 3 decades: one study from 1993 showed that almost 10% of patients with psoriasis wished to be dead and 5.6% reported active suicidal ideation at the time of the study.<sup>7</sup> Why is it, then, that we still do not have a good understanding of the interrelationship between psoriasis, mental health, and therapeutics? There likely is a connection between these components, as it is now well accepted that cytokines (eg, interferons) can have a considerable impact on depression and that treatment with biologics for psoriasis tends to improve depressive symptoms.<sup>8</sup> This is an area in which we need better awareness and understanding as well as some guidance on how to approach this topic with our patients—particularly how mental health may play into therapeutic decisions for psoriasis, such as earlier escalation to rapid-acting systemic therapy in patients with psychiatric comorbidities.

## Access to Psoriasis Care

With so many effective treatments for psoriasis, one of the most frustrating challenges we face is that many patients with psoriasis still experience notable barriers to care. While access in urban areas generally is reasonable, in rural areas, 75% of patients have no psoriasis-treating providers in their ZIP code and have to seek psoriasis-related care outside the 3-digit ZIP code prefix.<sup>9</sup> Unfortunately, in most cases, even after traveling and waiting for an appointment patients will not be offered the full spectrum of available psoriasis treatments. Dermatologists already are much harder to find in rural areas, but the proportion of rural counties without a dermatologist who prescribes biologics approaches 90%.<sup>10</sup> Functionally, this places a huge burden on our patients, who frustratingly see commercials for highly effective psoriasis treatments on television but are not able to access them. What good is having medicines that can help more than two-thirds of patients achieve 100% clearance<sup>11</sup> when patients cannot access them?

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## Technology and Treatment Optimization

As our society becomes ever more technologically advanced, medicine seems to be caught in a bit of a quagmire, with our practices often using outdated technology in the name of HIPAA compliance and communicating via fax on important matters such as medication coverage. Nevertheless, dermatologists are beginning to increase integration of artificial intelligence (AI) and advanced technologies to make patient care more efficient and effective via education/awareness, image analysis, remote management, and telemedicine.<sup>12</sup> Recently, the National Psoriasis Foundation published guidance for the use of telemedicine, suggesting that it could be used for expanded access and expedited care in appropriate settings.<sup>13</sup> However, some caution should be used when interpreting data in this sphere. While AI technology has been purported to outpace dermatologists' diagnosis of psoriasis in some cases, the conditions tested (ie, the training set and evaluation image bank) and special tools used (such as dermoscopy, which is not routinely used in clinical practice for psoriasis diagnosis) may make the results inapplicable to general care.<sup>14</sup>

Perhaps more promising is the use of digital aids to help with long-term care, treatment reminders, and comorbidity evaluation/screening. Similarly, telemedicine can be utilized to provide skilled psoriasis care to patients in rural areas who otherwise might not have access. One such program demonstrated that asynchronous e-consults were able to achieve Psoriasis Area and Severity Index (PASI) and body surface area outcomes similar to in-person dermatologist care.<sup>15</sup> Using AI and technology also could assist with drug development and guide treatment. For example, a psoriatic arthritis (PsA) risk model developed in a Danish cohort suggested that early treatment with an IL-17 inhibitor in high-risk patients could reduce PsA incidence by 64%.<sup>16</sup>

## Personalized Clinical Care

Even as we become accustomed to higher PASI 90, PASI 100, and mean PASI improvement numbers with our newer biologics, drug development in psoriasis has not stopped. Pipeline medications include an oral peptide-based IL-23 inhibitor<sup>17</sup> and targeted tyrosine kinase 2 inhibitors.<sup>18,19</sup> What is perhaps most interesting is to envision a future in which we could select treatments based on either patient phenotype (eg, involvement of hands and feet could suggest a certain single or class of medicine) or genotype.<sup>20</sup> This has clear impacts on patient care, as dedicated trials of psoriasis medications tend to result in lower achievement of outcome measure thresholds than subanalyses of clinical trials; for example, in a dedicated trial of risankizumab for nonpustular palmoplantar psoriasis, achievement of a palmoplantar Investigator Global Assessment score of clear or almost clear was demonstrated in 33.3% of treated patients vs 16.1% of those receiving placebo at week 16 ( $P=.006$ ).<sup>21</sup> A subanalysis from the pivotal UltiMMA trials showed

that more than 70% of risankizumab-treated patients achieved complete clearance (palmoplantar PASI score of 0) by week 16.<sup>22</sup> Indeed, there is some evidence to suggest that the pathophysiology of plaque psoriasis, nonpustular palmoplantar psoriasis, and palmoplantar pustular psoriasis are different, with more interferon- $\gamma$  signaling involved in nonpustular palmoplantar psoriasis<sup>23</sup>—which may explain why some limited case reports have suggested the use of Janus kinase inhibitors for recalcitrant cases of palmoplantar plaque psoriasis.<sup>24</sup>

Even with such high rates of skin clearance, the treatment landscape in PsA lags behind. There is a need for higher-efficacy treatments in PsA. On a positive note, it may be reflective of how advanced our treatment conversations about psoriasis have become that rather than analyzing gross PASI improvements between one drug and another, we now are able to address nuanced differences between various presentations of psoriasis to help us select the right tool from our treatment toolbox.

## Final Thoughts

We are lucky to practice dermatology in a time when there has been so much development, with many good treatment options for patients with psoriasis. What we had thought of as the ultimate goal in the past—to get the skin relatively clear—is now a realistic outcome for most patients. This allows us to focus on other important considerations, such as assessing and addressing comorbidities, improving access to care, implementing technology to improve psoriasis care, and refining our understanding of how different manifestations of psoriasis should alter our approach to treating patients. And though we have come a long way in recent years, there still is much to be done to lift up the psoriasis community as a whole. It's reassuring to know that many are still working toward this goal.

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