Biologics in Pediatric Dermatology

Younger patients are finally gaining access to a range of highly targeted treatments with lower risk profiles than their traditional alternatives.

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Over the past several years, dermatologists have seen biologics revolutionize the treatment of severe dermatologic conditions like eczema and psoriasis in safer and more effective ways for adult patients.

Now that they have proven effective for adult dermatology, many are being approved for use in pediatric dermatology, too. That advancement means younger patients are finally gaining access to a range of highly targeted treatments with lower risk profiles than their traditional alternatives.

Since research in the field is continually evolving, it’s important for dermatologists to keep an eye on which medications are available for which patients, the right times to prescribe them, and what’s coming down the pipeline for the future of pediatric care.

THE IMPACT OF BIOLOGICS ON ADULT DERMATOLOGY

In the past, both adult and pediatric patients with dermatologic diseases like severe psoriasis and eczema were treated with medications such as prednisone, methotrexate, and cyclosporine. These treatments work by targeting the entire immune system. As a result, they also have many potential negative side effects. Prednisone, in particular, can cause weakening of the bones and an increased risk of glaucoma, among a long list of other side effects. Cyclosporine’s side effects include increased blood pressure and a heightened risk of kidney damage. Long-term treatments with methotrexate are linked to liver damage.

Biologics, on the other hand, halt an overactive immune system by more specifically targeting inflammatory pathways rather than the entire immune system.

In adult dermatology, we have witnessed the remarkable benefits of using biologics to treat skin conditions like psoriasis, eczema, and hidradenitis suppurativa. There are currently 11 FDA-approved biologics for psoriasis and research shows that, for many people, biologics may be the most effective treatment in targeting inflammation directly associated with the skin condition.

Eczema’s main biologic, dupilumab (Dupixent, Sanofi/Regeneron), has been shown to reduce symptoms by 75 percent after 16 weeks in more than half of patients. For hidradenitis suppurativa, 63 percent of patients on adalimumab (Humira, Abbvie) saw significant benefits after a 24-week trial while results for more long-term treatments remain highly effective.

Side effects exist, but studies indicate the risk profile for biologics is quite favorable. Biologics used in the treatment of psoriasis and hidradenitis suppurativa can cause a slightly increased risk of infection in the skin, either from bacteria, fungus, or virus. In eczema patients, a common side effect is redness of the eyes.

In all, the most regular side effect is a lowered immune system with an increased risk of skin infections, but—thankfully—biologics negatively impact the immune system less than older medications. Even so, it’s important that patients being prescribed biologics don’t have tuberculosis, hepatitis, HIV or other immune deficiencies.

BIOLOGICS TRANSFORM PEDIATRIC DERMATOLOGY

While adults have been enjoying the benefits of biologics in treating skin conditions like psoriasis, eczema, and hidradenitis suppurativa, many are being approved for use in pediatric dermatology, too. That advancement means younger patients are finally gaining access to a range of highly targeted treatments with lower risk profiles than their traditional alternatives.
enitis suppurativa for years, pediatric patients have been stuck using older generations of medication with potentially harsher consequences on the body.

The reason is simple: the challenges associated with running pediatric studies to gain FDA approval on new medications has unfortunately left dermatologists with little choice but to prescribe older drugs with higher risk profiles.

Thankfully, times are changing. Biologics are slowly being approved for pediatric use, which has been a total game-changer in terms of effectively and safely treating some of the most common and severe skin conditions.

Pediatric patients with moderate to severe psoriasis can now be treated with ustekinumab (Stelara, Janssen) for ages 12 and up or etanercept (Enbrel, Amgen) for four to 17-year-olds. These medications provide major benefits for children with psoriasis and so far have shown an excellent safety profile.

Recent safety reviews of pediatric biologics treatments for psoriasis show that only 38.7 percent of patients (age 18 and younger) reported one or more adverse effects. Injection site reactions were the most commonly reported adverse effect in 18.9 percent of child patients, followed by infections in 11.3 percent.

Dupilumab recently was approved for children with eczema, aged 12 and older. The medication mitigates the overreaction of the immune system, lowering the severity of inflammation and decreasing the symptoms of the disease. The most common side effects are cold sores around the mouth or eye irritation.

As in adults, adalimumab (Humira) also treats hidradenitis suppurativa for children 12 years and up, attacking overactive proteins to slow the inflammatory cascade. This can reduce inflammation that causes so many of the condition's symptoms.

**BIOLOGIC ADVANCEMENTS IN THE PIPELINE AND WHAT TO ANTICIPATE**

When it comes to medications that are meant to mitigate the impact of a dermatological disease, the more targeted we can get, the better. Biologics are developed to target individualized pathways of an autoimmune disease so they have less impact on the entire immune system, but there is still room for improvement.

That helps explain why in 2018 alone, the FDA approved 17 new biologics and they’re predicted to comprise more than a quarter of the pharmaceutical market by 2020. However, these new biologic therapies are only available for adults, at least for now. Most will be slow to trickle down to pediatric dermatology due to the lack of pediatric trials and the unwillingness of pharmaceutical companies to undertake those projects.

That said, there is some hope on the horizon. Currently, ongoing pediatric trials for FDA-approved adult biologics like ixekizumab (Taltz, Eli Lilly and Co.), guselkumab (Tremfya, Janssen) and brodalumab (Silig. Ortho Dermatologics) are in development for psoriasis in children. Risankizumab-raa (Skyrizi, Abbvie) is also in clinical trials for adolescent patients with eczema. If approved, they will add to the small but growing list of safe and effective biologics available for dermatological conditions in pediatric patients.

Someday dermatologists will be able to create highly personalized biologic treatment plans—we’ll test which pathways in particular are overactive and prescribe the exact biologic to match. Until then, we must rely on the development and approval of new biologics that target different pathways and have compelling safety profiles. It’s a process long employed in adult dermatology, and younger patients are finally starting to enjoy the same positive outcomes, too.

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