Atopic dermatitis, or eczema, is a common chronic inflammatory skin condition that causes a red, itchy and scaly rash. People with moderate to severe eczema that do not respond to traditional therapy can benefit from advancing biologic therapies.

Biologics are bioengineered drugs that contain antibodies against a specific target antigen. These drugs are small molecules derived from living things such as humans, animals or microorganisms. Biologic treatments have been successful in treating many other inflammatory conditions, such as rheumatoid arthritis, psoriasis and allergic asthma. Dupilumab (brand name Dupixent) is the first FDA-approved biologic treatment for adults and children aged 6 and older with atopic dermatitis.

Mechanism: Dupilumab is a human monoclonal antibody that targets the IL-4Rα subunit of the receptor complexes for IL-4 and IL-13 and inhibits its overactive signaling cascade. IL-4 and IL-13 signals are a major driver of inflammation and symptoms of atopic dermatitis. Suppressing this pathway decreases the release of inflammatory markers and provides therapeutic benefit.

Dupilumab is packaged in a pre-filled syringe and injected subcutaneously. For adults, the initial loading dose is 600 mg and the maintenance dose is 300 mg, every 2 weeks. For children and teens, the dose differs by weight and should be discussed with a healthcare provider. This medication is favorable because, unlike many other immunosuppressive therapies for eczema, it has a very good safety profile and does not require routine lab work. The main adverse reactions reported are injection site reaction, conjunctivitis, dry eyes, cold sores and facial redness.

The field of biologic treatments has revolutionized treatment for many inflammatory conditions and is still advancing. As scientists gain more understanding of the immunologic pathways that fuel the inflammation in eczema, new biologics are being created to target those immune responses.