Can you please give us a brief overview of Type 2 Inflammation?

Type 2 inflammation is a normal part of the body's immune system and is important in fighting off certain kinds of infections.(1,2) Sometimes, as a result of genetic factors(3,4,5,6), environmental triggers (7,8,9) and a kind of overactive response of the immune system(10,11,12), excessive type 2 inflammation may lead to disease.(13)

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What diseases fall under Type 2 inflammation?

Science has shown that excessive type 2 inflammation can underlie a number of diseases which can often coexist.(1,2,3,4) These diseases are all chronic and inflammatory in nature, meaning the patients who have them suffer for a prolonged period of time if untreated, and include atopic dermatitis, or eczema, asthma, and chronic rhinosinusitis with nasal polyposis.(5,6,7) More recently type 2 inflammation has also been shown to be a component of other chronic inflammatory skin diseases including chronic spontaneous urticaria (8,9,10,11) and prurigo nodularis (12,13,14), and even a gastrointestinal disorder known as eosinophilic esophagitis (15,16). From this emerging science we can see that type 2 inflammation can occur in several parts of the body resulting in a range of diseases that may seem to be unconnected, but they actually are connected - by the underlying type 2 inflammation.

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What types of treatments are available?

I would like to set this question aside for now. It is a bit complicated to answer in a holistic fashion given the breadth of diseases. If desired I could approach by discussing the common therapies which are different types of steroid treatments (topical, systemic, inhaled depending

on the disease in question), immunosuppressants (for some diseases) and biologics including dupilumab.

What are the challenges in diagnosing these patients in minority populations? (on our call you mentioned the difficulty of diagnosing this disease in darker skin color.) Would this fall under some of the challenges?

Research has shown us that there are differences in minority populations who have diseases characterized by type 2 inflammation that can lead to differences in how these diseases present as well as challenges in diagnosis and potential differences in how patients may respond to certain treatments (1,2,3,4).

For example, in addition to the overwhelming itch that is the hallmark of atopic dermatitis, patients with skin of color often present with different signs of the disease including thickened, or lichenified skin, dark circles around the eyes, and patches of hyper-pigmented skin.(5). The severity of atopic dermatitis can be underestimated in Black patients as one of the key characteristics used to assess the level of disease is the amount of erythema, or redness, that is present. Erythema is much more difficult to assess in patients with darker skin tones as it does not present the same as in patients with lighter skin tones, it appears more violet rather than red or pink. Because of this, the degree of erythema may be underestimated and may prevent early diagnosis of atopic dermatitis leading to more severe disease or delay in access to advanced therapies (5,6,7).

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Other topics I can expand upon, if desired, include the immunologic and biologic differences related to atopic dermatitis in patients with skin of color; additional examples related to under-represented minorities in asthma or other type 2 diseases.