BENCHSIDE DISPATCHES

IN SEARCH OF THE CAUSES OF AND NEW TREATMENTS FOR ITCH

AN INTERVIEW WITH ETHAN LERNER, MD, PhD

Welcome to the next installment of Benchside Dispatches, a series of interviews with top researchers in the field of dermatology intended to highlight important advances in the care of medical skin disorders. Over the course of this series, prominent thought leaders will explore the latest research in specific dermatologic disease states.

In this installment, Ethan Lerner, MD, PhD, discusses pruritus. Dr. Lerner has been interested in itch since a young age, and his research has focused on uncovering the pathways that underlie itch. Dr. Lerner is Associate Professor of Dermatology at Harvard Medical School and Associate Biologist (Dermatology) at Massachusetts General Hospital.

The following is excerpted from a video interview with Dr. Lerner. You can watch the full interview at DermTube.com.

What is the holy grail in itch research?

Ethan Lerner, MD, PhD: In my opinion, the holy grail in itch research is to understand the various pathways, mediators, molecules, receptors, and channels involved in itch, so that they can be targeted and result in treatment for itch in every itchy condition.

What do you consider some of the most important discoveries in pruritus research recently?

Dr. Lerner: There have been tremendous advances in itch research in the past five to 10 years, and it is an ongoing process. The most important ones, in my view, are first recognition of the importance of itch, the dissection of a variety of molecular pathways including those in the periphery with the MAS-related G protein-coupled receptors, those at the intersection of the dorsal root ganglion and the spinal cord with brain natriuretic peptide and gastrin-releasing peptide and their respective receptors, and the role of inhibitory interneurons in the spinal cord.

What has been the focus of your own research? What led you in your current direction?

Dr. Lerner: I've always been interested in itch starting with having atopic dermatitis as a child, and I thought itch was fascinating and a bit of a nuisance. Our particular area of interest ...We have two areas of interest. One is the imaging of nerves in the skin to see to what they are connected, including a variety of cell types in the skin and also the relationship between the nerves and the immune system to try to answer the question, is it the itch that rashes or the rash that itches?

Our other area of research is how substance P mediates itch and whether or not that is through neurokinin-1 receptors or this relatively recently identified class called Mrgprs.

What are the greatest challenges in itch research?

Dr. Lerner: The greatest challenges with respect to itch research are having good models. What happens in a mouse is not necessarily what happens in the person. It's very difficult to ask a mouse if it feels itchy and if the scratching that occurs is really the same as an itch in a person.

The other challenge is just the hard work of developing genetic models to be able to tease apart what is happening with itch and inflammation in these models. ■

Get more. Watch the full interview with Dr. Lerner online at DermTube.com/series/benchside-dispatches.