Top Stories in Research

By Dr. Jan Dutz

Over the past year, significant progress has been achieved in a number of areas of skin research. Here's a summary of some of the research that will likely result in improvements in the treatment of skin disease.

Vitamin D and the Sun

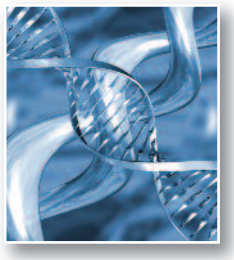
The discovery of the importance of vitamin D in modifying the risk for immune diseases and cancers is one of the big stories of the past decade. Vitamin D is produced in the skin in response to sunlight. Vitamin D deficiency has been linked to autoimmune diseases (where your immune system attacks your own body) and cancer risk, and Canadian investigators are actively studying the use of vitamin D creams and lotions to prevent these diseases.

In addition to vitamin D, skin cells produce antimicrobial peptides or "natural antibiotics." These peptides can stimulate your immune system and are plentiful in psoriatic skin. This may explain why inflamed psoriatic skin is seldom infected. Investigators in Germany have now shown that vitamin D analogues applied to the skin decrease "inflammatory" antimicrobial peptides, while at the same time possibly increasing the levels of protective antimicrobial peptides. These peptide molecules will likely become a new target for psoriasis therapy. The use of topical vitamin D may likewise be expanded. Currently, the CDA recommends the use of oral vitamin D supplements rather than lying in the sun to get your quota of the vitamin.

DNA and Psoriasis

It has been known for a long time that psoriasis occurs more frequently in some families. If both parents have psoriasis, the chance that their child will develop the disease is as high as two in five. When one parent only is affected, the risk is about one in 10.

Three very large genetic studies of psoriasis were published in 2009. These confirmed that psoriasis is linked to a gene complex that controls many immune reactions, that genes controlling the skin barrier may be associated with psoriasis and that certain genes are involved in inflammation and can make some people more likely to develop psoriasis. In this last case, drugs that target the chemicals involved in the inflammatory process are currently in use or in development. Canadian rheumatologists and dermatologists participated in these studies, which involved Canadian patients.



Leaky Skin

Filaggrin is a protein that binds protein fibres in skin cells and helps to form a barrier at the skin surface. This barrier keeps water in the skin and prevents the entry of microbes and harmful chemicals. Mutations in the gene that controls the production of filaggrin can affect the function of the protein, resulting in "leaky skin."

By reviewing the results of 24 studies relating changes in filaggrin to allergies, investigators from Scotland have concluded that people with mutations in the filaggrin gene have a four to five times higher risk of developing eczema and a three-fold higher risk of developing hay fever and eczema than individuals without mutations. Canadian investigators participated in key studies linking filaggrin mutations to eczema.

These studies thus suggest that returning the barrier function of the skin to normal may be very important in preventing or slowing the progression of allergies. Anti-inflammatory and moisturizing creams are known to have beneficial effects upon barrier function. CS

Jan Dutz, MD, FRCPC, is Associate Professor at the University of British Columbia, a scientist with the Child and Family Research Institute and the Vancouver Coastal Health Research Institute and research advisor to the Canadian Skin Patient Alliance.

Contact the CSPA

Canadian Skin Patient Alliance
Toll-free: 877-505-CSPA (2772)
E-mail: info@skinpatientalliance.ca
Web: www.canadianskin.ca
Social networking site:
www.skinergy.ca