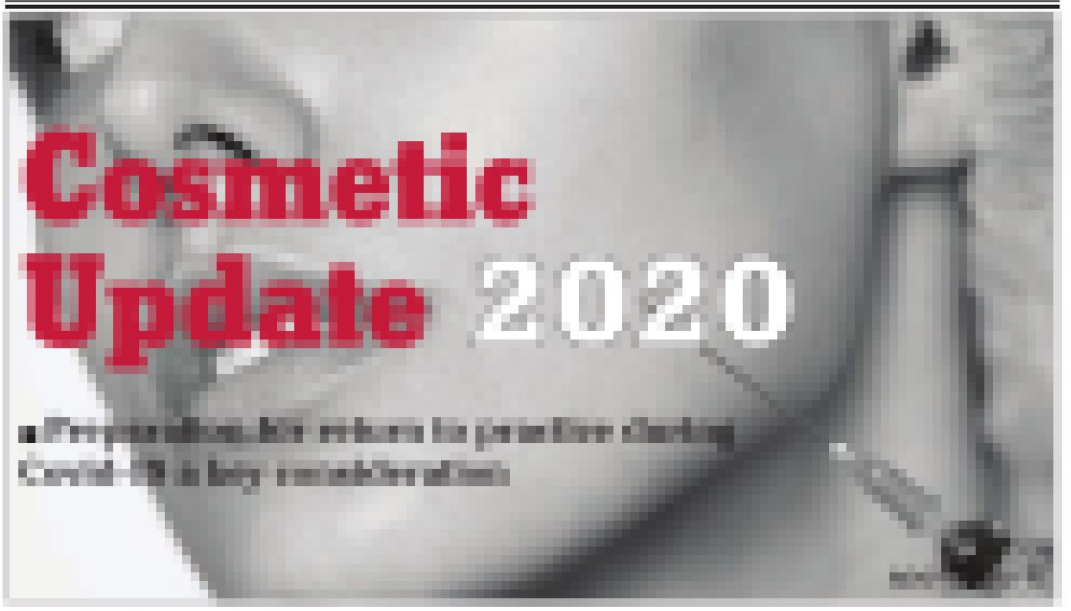
The Chronicle of SKIN & ALLERGY

PRACTICAL THERAPEUTICS *and* CLINICAL NEWS *from the* WORLD *of* DERMATOLOGY ■ JUNE 2020



Cosmetic Update 2020

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Effective systemic Txs for adults with AD

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Diet linked to inflammation

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Psoriasis

Psoriasis linked to increased Ca incidence and mortality

■ Study highlights that lifestyle risk factors play important role in psoriasis-cancer link

by KYLIE REBERNIK,
Assistant Editor, The Chronicle

Individuals with psoriasis appear to have an increased risk of cancer incidence and cancer-related mortality, according to a recent review published in *JAMA Dermatology* (2019; 155(12):1390-1403).

"The association between psoriasis and cancer is made plausible through several potential explanations," said lead author Alex Trafford in an email interview with THE CHRONICLE OF SKIN & ALLERGY. "Inflammation plays a key role in the pathogenesis of psoriasis, with the association between chronic inflammation and cancer previously proven in conditions such as Crohn's disease and Barrett's esophagus."

Alex Trafford

Trafford is a PhD candidate at the University of Manchester and holds a Master of Science in Demography and Health from the London School of Hygiene and Tropical Medicine.

"I think that cancer [as a comorbidity to psoriasis] has received less focus in some areas, for example, guidelines, due to the complexity of the association and also the

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Skin disease: *Low sugar, fat, glycemic diets beneficial*

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promoting accumulation of IL-17A–producing γδ T Cells" published online ahead of print in the *Journal of Investigative Dermatology* (Feb. 9, 2020) suggests that diet—rather than obesity itself—may cause skin inflammation and lead to the development of psoriasis.

Different Tx options for patients

Dr. Barankin, the medical director of Toronto Dermatology Centre, believes the UC Davis study findings could lead to different treatment options for patients.

Dr. Benjamin Barankin

"We know that patients with psoriasis, on average, weigh more. We know that if they lose weight, not only do their psoriasis symptoms often improve but also they seem to respond better to the treatment they are on," said Dr. Barankin in an interview with THE CHRONICLE OF SKIN & ALLERGY.

"We know that people who are obese and have had bariatric surgery, some of them, have seen their psoriasis symptoms disappear completely. So that has been interesting.

"What is neat, I think, with this mouse-model study is that they had inflammation in their ears, dermatitis on their skin and that was showing up before the weight gain. We knew that weight gain was an issue, and their data is suggesting even pre-weight gain, the high fat, high sugar is pro-inflammatory and dangerous for the skin."

Dr. Samuel Hwang, professor and chair of dermatology at UC Davis, and his research group note that prior studies showed obesity as a factor for the development or worsening of psoriasis. Meanwhile, the Western diet, which includes a high saturated fats and sucrose coupled with a low intake of fibre has been linked to an increase in the incidence of obesity in the world.

The researchers found short-term exposure to the Western diet was able to activate psoriasis from dermatitis prior to significant body weight gain.

Using a mouse model, the study's authors discovered that a diet resembling the Western diet in humans, which included both high fat and high sugar, induced observable skin inflammation. In four weeks, mice on the Western diet had increased ear swelling and visible dermatitis compared to the control group of mice.

"I think that is very interesting. I have not seen anything like that certainly in a mouse-model mimicking our Western high fat, high sugar diet," said Dr. Barankin. "The fact that they were able to observe skin inflammation and quite quickly [is impressive]. So, it is not that you have to do this for six months and then see improvement, it seems to be so much of a connection that you are seeing the effects pretty quickly, quite early on.

"Certainly, this is interesting, very suggestive and we need to replicate it."

Further, the study's researchers detailed how the skin inflammation occurs, as a result of a Western diet, identifying bile acids as key signalling molecules in the regulation of skin immunity.

Produced in the liver from cholesterol, bile acid is metabolized in the intestine by the gut microbiota. Bile acid plays a significant role in dietary lipid absorption and cholesterol balance in the blood.

The UC Davis research group also found that cholestyramine, used to lower cholesterol levels by binding to bile acids in the intestine, helped reduce skin inflammation. The finding by the study's authors suggests that bile acids mediate the development of psoriasis. The binding of cholestyramine to bile acids in the gut, and its ensuing release through the stool allows for the lowering of skin inflammation.

"This is very specific because it is kind of binding bile acids, which is unique and so they are suggesting this mediation of bile acids in the [treatment] of psoriasis, which is not something we are familiar with," said Dr. Barankin. "Binding it, they are suggesting, lowers skin inflammation and perhaps even inflammation elsewhere in the body, which could include cardiovascular inflammation too. [Binding of bile acids] was not being looked at.

"This idea that cholestyramine, a bile acid binder is reducing inflammation—we might have dermatologists in the near future prescribing cholestyramine—and that is not something that we have ever thought about. This is early, this is very interesting. I think we want to replicate it, but I think there is something to it, for sure."

Further studies needed

Both Dr. Barankin and the UC Davis researchers agree further studies are needed to better understand the mechanisms behind skin inflammation resulting from diet and the interaction between metabolism, microbes and immunity.

However, given the findings of the UC Davis study, which suggests dietary components rather than obesity itself contributes to skin inflammation, Dr. Barankin believes dietary recommendations for psoriasis patients could have a positive impact in treatment.

"I think [the study] is really suggesting that we should be thinking about low fat, low sugar, low glycemic diets in our psoriasis patients as well," Dr. Barankin said. "I think, as [the study] suggests, we should be starting to talk about that because anything that causes [the patient] to lose weight would be good. It would be nice to see some data on fasting and intermittent fasting, which is getting a lot of attention, but I don't know that there is a lot of data yet for this in psoriasis.

"I think we need to start appreciating that diet is a factor and our patients like that. [Patients] like us [as physicians] to talk about more than medications. They are always asking about natural things: vitamins, herbals and the more natural things we can talk about, the better. This is as natural as it gets and if we can get them to lose weight and have a better diet, it'll be more than just their skin that improves."