Smart medicine with new application?

Bodyworks

with Jill Margo

Since these images appeared in the international media earlier this year, Brett King has been deluged with emails from people seeking help.

King, a dermatologist and assistant professor at Yale University's School of Medicine, is the first person in the world to break through the wall surrounding alopecia, a condition that causes hair loss.

He did this using a sophisticated biologic agent and the question now is whether it will be possible to crack through the other impenetrable wall that surrounds male pattern baldness.

These two forms of hair loss have different drivers. Alopecia is an autoimmune condition where the body attacks its own hair follicles and causes the hair to fall out. Male pattern baldness has genetic and hormonal drivers.

But King is optimistic. "This agent had such a profound result it is impossible for me to believe that this step forward will not renew energy for research that could benefit the rest of us who have male pattern baldness or other types of hair loss," he says.

The photographs illustrate the astonishing restoration of hair in a young man burdened with both alopecia and the skin condition psoriasis.

Kyle Rhodes, now 25, had lived with his highly visible condition for many years. He had large scaly plaques of psoriasis on his head and no hair anywhere.

At a school dance in seventh grade, he took off his cap and found it full of hair. He'd suffered from spot hair loss since he was a toddler but the week he turned 18, all his hair fell out.

Although he had adjusted to the hair loss, his psoriasis was bad too and he sought help from Brett King, a dermatologist at Yale.

While the treatment wasn't wonderful for his psoriasis, it was for his hair loss. After two months Rhodes began to grow scalp and facial hair.

After three more months he had a full head of hair and clearly visible eyebrows and eyelashes, as well as facial, armpit and other hair. After eight months, he had full re-growth of his body hair.

Soon after his photographs appeared in the Journal of Investigative Dermatology, they were flashed around the world.

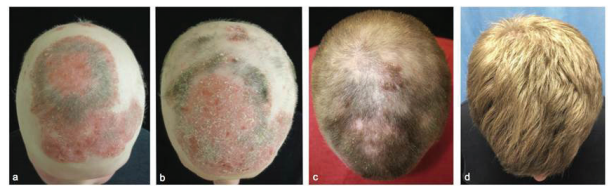


Photo Credit: Yale Dermatology
Panel a – before treatment
Panel b – 2 months into treatment with tofacitinib
Panel c – 5 months into treatment
Panel d – 8 months into treatment

King had treated him with the FDA-approved drug Tofacitinib citrate which is designed to treat rheumatoid arthritis. He says it wasn't an accident that it worked.

"This discovery was borne of science. Smart medicines like this do not happen by chance and they highlight the importance of investing in research."

The drug had been used successfully for psoriasis in humans and a scientist at Columbia University had shown it could reverse a less extreme form of hair loss in mice called alopecia areata.

King's patient had alopecia unversalis which means total hair loss, including eye lashes, eyebrows, facial, body, groin and underarm hair.

As the best available science suggested this drug might work, he went ahead. He explains that traditional treatment for alopecia usually involves carpet bombing the immune system in the hope of suppressing the mechanism that affects hair.

"The problem is that it ransacks 30 different processes along the way in order to capture the process it wants."

But this expensive new drug is much smarter. It accurately targets the pathogenic mechanism that underpins alopecia.

In alopecia, the hair follicle sends out a distress signal. This signal recruits the body's immune system. When immune system attacks, the hair leaves the body. "The distress signal shouldn't be there," says King. "The follicle is raising a flag for no good reason and this drug literally turns down the volume of the distress signal so it's not heard by the immune system. This allows the hair cycle to resume and so the hair regrows."

While the results are provocative, he says they need to be repeated in clinical trials.

As the drug can have serious side effects and can also be lethal, he is developing a cream to avoid its systemic effects.

The cream would be for people with alopecia areata which is the most common auto immune disease in man. He says the response to the case has been enlightening. "One thing you can't understand until you read 2000 emails is how devastating it is not to know if the hair you go to sleep with will be there in the morning. That unpredictability exacts a toll because we are all accustomed to having a certain amount of control over our appearance and this is a disease where you have no control from day to day."

In Australia, an estimated 100,000 Australians suffer from spot alopecia. Between five and ten thousand suffer from the universal form, according to Rod Sinclair, professor and director of Dermatology at the Epworth Hospital and Head of the Epworth Dermatology Research Centre. He is cautious about the implications of the Yale case and about the effect it could have on research into male pattern balding.

"There has been a pharmacological revolution in past 15 years where new drugs have been identified that target specific inflammatory markers. To date it has been disappointing finding one for alopecia areata. All the prospects did not work."

Sinclair says while the Yale case is exciting and provides an anecdote on which to base future research, it can't be said to be a cure.

"We've seen it before with other biologic where they have been single cases reports that that fizzled."

In the US the drug costs $25,000 a year.

Mediterranean Diet and Healthy Aging

Study after study has shown that the traditional Mediterranean food pattern and cuisine, high in legumes, fruit, vegetables and olive oil, moderate in grains, dairy, seafood, wine and low in meat, help people live longer.

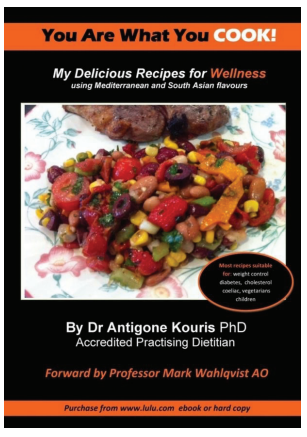
The PhD study I did at Monash University with Professor Mark Wahlqvist in the 1990s, in conjunction with Professor Antonia Trichopoulou from Athens University, was the first to show that following a Mediterranean food pattern in old age can reduce the risk of death by 50% after 5 years follow-up. Much to our surprise, we showed that the most protective aspect of the Mediterranean diet pattern was NOT the olive oil but the legumes!

Our novel Mediterranean diet pattern score has since been applied to over 1 million study subjects by other researchers. These studies have also shown that the Mediterranean diet pattern confers longevity, reduces the risk of cardiovascular disease, can lower the risk or mitigate severity of diabetes, can reduce the risk of several cancers, Alzheimer's disease, depression and even help manage weight and fatty liver (despite high olive oil content).

The first randomized trial on the Mediterranean cuisine (where study subjects were advised to eat Mediterranean dishes) was conducted in Spain on over 7000 people (PREDIMED randomized trial). It concentrated on the therapeutic effects of eating tomatoes in the form of "sofrito" (a sauce made with tomato, onion, garlic, olive oil, herbs) at least 2 times a week and up to 4 tablespoons of extra virgin olive oil per day. It found these foods, in conjunction with legumes, nuts and seafood (each eaten at least 3 times a week), fruit, vegetables, wine and less red meat, butter, margarine and sweets, lowered heart disease rates by 30 per cent after 5 years. In contrast, Spaniards randomized to consume a low fat diet had higher rates of heart disease!

All this evidence on the Mediterranean food pattern and cuisine has given it the highest possible ranking by the NH&MRC (level 1 evidence) for the prevention of chronic diseases. So convinced by the evidence, the Royal Australian College of General Practitioners has recently released a handout for doctors and dietitians on how to advise patients to follow a Mediterranean diet for the prevention of heart disease.

While most of the studies have concentrated on the Greek diet, I believe the cuisine from Greece's Mediterranean neighbours like Turkey, Lebanon and Israel are also a recipe for healthy living. The common thread in all these Mediterranean cuisines is the vegetarian focus plus the herbs and spices. I can't emphasize enough that it's the legumes eaten as a meal in place of meat at least twice a week that played the really pivotal role in helping Mediterranean people live longer.



I was so inspired by our study findings that I have published a cook book "You are what you cook" (www.lulu.com) which features many legume based recipes and have released a healthy range of reduced sugar/ fat, gluten free cookies made with lupin flour (a legume!) (www.skinnybik.com).

By Associate Professor Antigone Kouris, PhD, Clinical Dietitian

LETTER to the Editor

I love our National Parks. It grieves me to think of the moves being made to privatise parts of some of them. So far, to my knowledge, the State Government has spoken of permitting resorts at Wilson's Promontory, Point Nepean and at Point Lonsdale lighthouse area. The construction of luxury resorts and spas in such places for private profit would benefit those who could afford it, but the ordinary person like myself, prefers an unspoilt landscape where all can partake of the natural environment. We need such areas for 'passive recreation' and we need to conserve the heritage of our National Parks. Far -sighted people in earlier times reserved these areas for the future. We are that future. I think we have saved Hanging Rock Reserve from commercial development. Well done to those who actively worked to this end.

Yours sincerely
W.L.Hebbard