Four Genes Linked to Alopecia Areata Discovered

BY ROBERT FINN

New genetic research is yielding some important clues into the puzzling condition of alopecia areata, Dr. Maria Hordinsky reported at the women's and pediatric dermatology seminar sponsored by Skin Disease Education Foundation (SDEF).

By doing whole-genome analysis on thousands of samples gathered over the last 9 years, investigators have found four genes associated with the disease. Surprisingly, none of the genes is implicated in psoriasis, which has long been considered a risk factor for alopecia areata. Conversely, none of the genes associated with psoriasis appears to be implicated in alopecia areata. Investigators announced the findings this year at the annual meeting of the Society for Investigative Dermatology in Montreal.

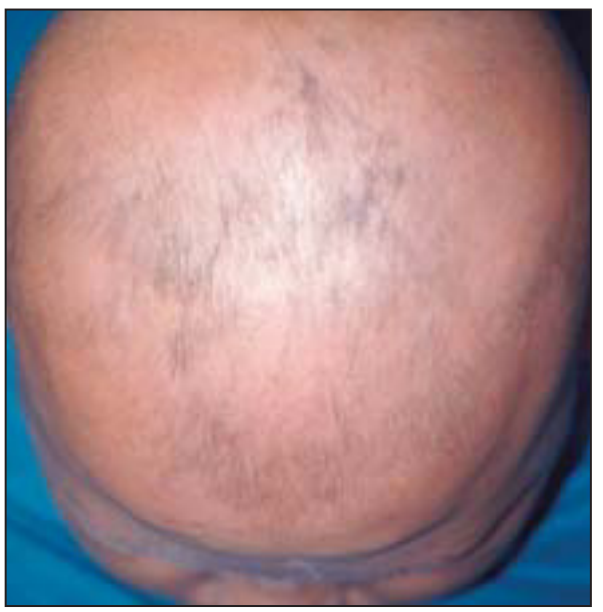
These findings have important consequences for treatment and research, according to Dr. Hordinsky, chair of the dermatology department at the University of Minnesota, Minneapolis.

"We've all been scratching our heads for the past couple of years wondering why on Earth the new biologics that work so well in psoriasis are not working in this disease," she said. "So now with this data, maybe one possibility is that the diseases are just completely different in the way they're molecularly structured. The thinking has changed in the past couple of months. If you were to start a clinical trial today in alopecia areata, based on the new information, you probably wouldn't pick some of the biologics that were picked a few years ago."

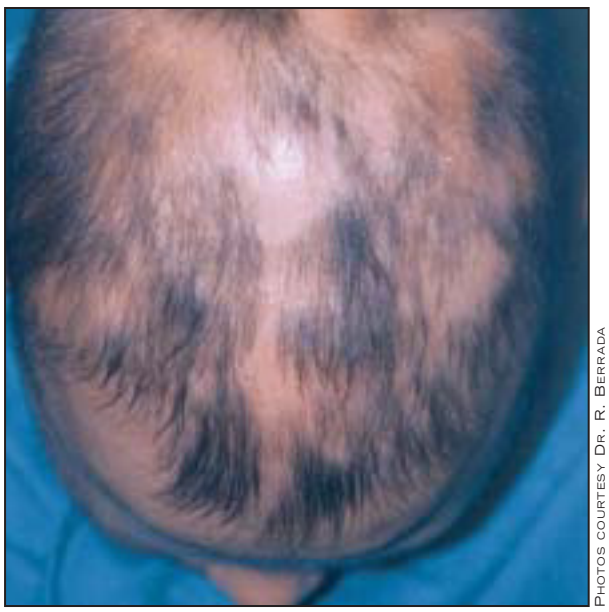
For now, though, Dr. Hordinsky emphasized that there is no "best" treatment for alopecia areata. Patients with patchy alopecia areata sometimes respond to topical or intralesional corticosteroids, minoxidil solution, anthralin, steroid-containing shampoos, excimer laser therapy, or combination treatment.

For extensive alopecia areata, Dr. Hordinsky suggested prednisone, topical minoxidil, PUVA, immunotherapy, pulse methylprednisolone, narrow-band UVB, or combination therapy. Other possible treatments include cyclosporine, tacrolimus, dapsone, sulfasalazine, hydroxychloroquine, retinoids, and biologics.

She recommended focusing on the patient's nail to diagnose alopecia areata. Between 10% and 66% of patients with alopecia areata have nail abnormalities, and these abnormalities may precede, follow, or occur concurrently with hair loss, she noted. Nail pitting is the most common abnormality, but there may also be longitudinal ridging, koilonychia, brittle nails, onycholysis, onychomadesis, and periungual erythema.



A child with alopecia areata universalis is shown prior to any treatment.



The child had significant hair growth after undergoing 50 sessions of PUVA therapy.

PHOTOS COURTESY DR. R. BERRADA

Dr. Hordinsky's presentation concentrated on alopecia areata in children, but she said that there are few differences in the pathophysiology of pediatric versus adult disease. "It's a disease that affects all ages, all races, and is seen equally in males and females."

The difference in children involves the psychosocial aspects of the disease, and physicians need to be sensitive to these issues. "It's not like body dysmorphic disorder, where people get fixated on something that's not quite right, worrying that their nose is imperfect or something," she pointed out. "This disease can result in very rapid, and sometimes dramatic, alteration in physical appearance. So there's a psychological adaptation that has to take place. Patients have to figure out: How do you live with this disease? How do you make yourself more normal looking so you fit better into your age group, into your peer groups, into school?"

Physicians can refer patients and their families to the National Alopecia Areata Foundation (www.naaf.org). "NAAF has a network of support groups throughout the United States and has a wonderful meeting that occurs once a year, usually in the summer," Dr. Hordinsky said. "The meeting really focuses on families and kids with alopecia areata and giving kids and families the environment where they can freely discuss the issues that they're experiencing as a parent or as a kid with this disease. That organization has provided the most incredible support and information to patients and families."

She encouraged all physicians to register patients—and their families—with the national Alopecia Areata Registry (www.alopeciaareataregistry.org). Now in its 9th year, the registry is supported by grants from the National Institute of Arthritis and Musculoskeletal and Skin Diseases. Enrollment involves obtaining blood samples and questionnaire data from children and adults.

Dr. Hordinsky did not disclose relevant conflicts of interest in her presentation. SDEF and this news organization are owned by Elsevier. ■

Oral Probiotic Reduces Severe Dandruff in Small Study

BY BRUCE JANCIN

BUDAPEST, HUNGARY — The oral probiotic *Lactobacillus paracasei* achieved substantial, clinically meaningful reductions in dandruff in a double-blind, placebo-controlled randomized trial.

Consumption of the probiotic also resulted in several secondary benefits, including reduced scalp erythema, itching, and greasiness, along with a steady decline over time in scalp *Malassezia* yeast counts, Dr. Audrey Gueniche reported at the annual congress of the European Society for Dermatological Research.

She and her coworkers at L'Oréal in Clichy, France, had previously shown that the probiotic speeds recovery of skin barrier function following controlled damage induced by tape stripping. They also demonstrated that *L. paracasei* helps regulate skin immune function.

Since those defects play an important role in dandruff conditions, the investigators decided to explore *L. paracasei* as a potential treatment for this common flaky scalp condition.

Thirty white men with moderate to severe dandruff were randomized to 57 days of daily consumption of *L. paracasei* in powder form or to placebo. Participants had to agree not to consume yogurt or other food products produced by the bacterial fermentation of milk during the trial and not to alter their customary face and scalp hygiene routine.

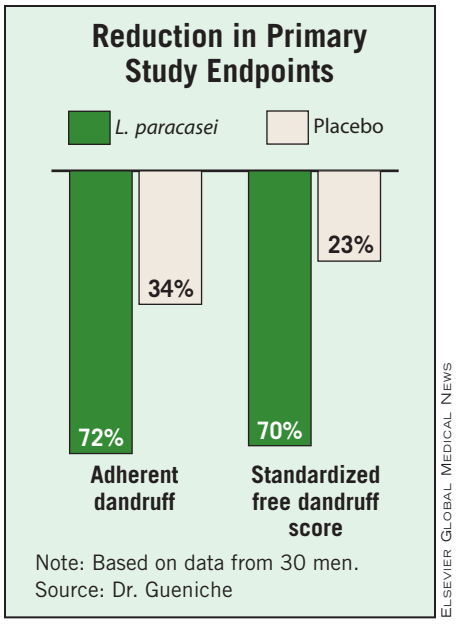
Biweekly clinical assessments documented declining levels of free and adherent dandruff, the coprimary study endpoints. The divergence between probiotic and placebo became significant after 4-5 weeks. After 57 days, the probiotic group had a 70% reduction from baseline in their standardized free dandruff score and a 72% decrease in adherent dandruff, compared with reductions of 23% and 34%, respectively, in the placebo group.

Investigator ratings of scalp erythema showed a 58% reduction in the probiotic group after 57 days and a 31% decrease with placebo. The reductions in dandruff and erythema scores were still maintained 1 week after the end of probiotic supplementation, according to Dr. Gueniche.

Global efficacy ratings made by blinded investigators on day 57 showed that 64% of patients in the probiotic arm were scored as having "good improvement" or "total healing," compared with 27% of controls, she reported.

Patients in the probiotic group rated their dandruff as reduced by 57% at the study's end, compared with a self-assessed 16% decrease in the placebo group. The *L. paracasei* group rated its scalp pruritus as 47% improved, versus a 13% reduction for controls. The probiotic users also rated their scalp erythema as 72% improved, compared with a 43% reduction reported in the placebo group.

Total *Malassezia* yeast counts showed a significant decrease over time in the probiotic group. In terms of *M. restricta* and *M. globosa*—the two species that have been identified as the major players in dandruff conditions—scalp counts increased sharply in the placebo group from day 15 on but remained steady over time in the probiotic treatment arm, Dr. Gueniche said. ■



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