Tracking Melanoma's Genetic Tentacles

The American Cancer Society and the National Cancer Institute estimate that 62,480 people in the United States will be diagnosed with melanoma this year, and that 8,420 people will die from it. Although melanoma rates have risen steadily in recent decades, data from the Centers for Disease Control show that those rates are particularly high among young women, probably because of the increase in suntanning and use of tanning booths in that population.

Many public health campaigns have focused on exposure to ultraviolet light as a risk factor for melanoma. However, many melanomas occur in areas of the skin that are not exposed to high levels of sun, and many arise outside of previously existing nevi. In general, the risk factors for melanoma include a history of severe sunburn, numbers of nevi, pale skin, red or blonde hair, light-colored eyes, freckles, history of dysplastic nevi or melanoma, exposure to sunny climates, age, gender, and of course, genetics.

For example, if you are a fair-skinned male living in Australia, your lifetime risk for developing melanoma may be as high as 4%. In the United States, one's lifetime risk of melanoma is about 1%, and this risk almost doubles with a family history of the disorder. If one has a family history of melanoma and a personal history of dysplastic nevi, one's risk for melanoma soars, so that someone with two relatives with melanoma and who has dysplastic nevi has an estimated 500-fold risk of developing a melanoma.

Dysplastic nevus syndrome is a distinct disorder that is inherited in an autosomal dominant manner. Dysplastic nevi are a precursor to malignant melanoma, though only about 5% of all melanomas arise from such high-risk settings. Genetic testing in these high-risk cases is available but not routinely recommended. Four loci—CDKN2A, CDK, ARF, and chromosome 1p22—have been associated with dysplas-

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tic nevus syndrome. The risk incurred by mutations in CDKN2A, which accounts for about 10%-40% of families with dysplastic nevus syndrome, confers a roughly 76% lifetime risk of developing melanoma.

Findings from a recent study suggested some value in conducting genetic testing in these families by showing that individuals with a positive test result increased their self-screening beyond recommended levels. Of course, this could lead to more false-positive biopsies, but that may be a reasonable trade-off in this population. There is no indication to use this type of genetic testing in a screening setting, but taking a family history in routine care might identify those needing specialized—and potentially lifesaving—surveillance.

Over the last year, genome-wide association studies have begun to shed some light on the underpinnings of sporadic cases of melanoma. Some of the associations are not that surprising because genes that seem to be related to traits such as fair skin or eye color (ASIP, TYR, and TYRP1) turn up as melanoma risk factors.

More recently, an area on chromosome 20q11.22 that contains a number of po-

tentially important genes has been identified. As with most results from genome-wide association studies, the effect sizes are very small (odds ratio less than 2) but are highly significant. In addition, we are finding that seemingly unrelated disorders can share common genetic defects. A most striking example of this is the shared association found for melanoma, diabetes, and heart disease with the CDKN2A/2B genes.

What mechanistic relationship do these disorders share? Could it be a link though immune function? It is increasingly likely that in a few years, we will have more answers and perhaps be able to develop more effective treatments. In the meantime, advise your patients to cover up—especially when visiting Australia—and watch out for those who have a family history of this serious disorder. ■

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Demo Results Indicate Incentives Improve Quality of Care, Safety

BY MARY ELLEN SCHNEIDER
New York Bureau

Providing financial incentives to hospitals has resulted in significant gains in quality of care for patients with acute myocardial infarction, heart failure, and pneumonia, and for those undergoing coronary artery bypass graft and hip and knee replacement, according to the third-year results from a Medicare demonstration project.

For example, from 2003 to 2006, hospitals who participated in the demonstration project improved their composite quality scores by 15.8% on average for the five clinical areas measured. The third-year results of the demonstration were released in June.

The Hospital Quality Incentive Demonstration was launched in October 2003 by officials at the Centers for Medicare and Medicaid Services and Premier Inc., an alliance of not-for-profit hospitals and health care systems. The demonstration, which involves more than 250 hospitals in 36 states, was designed to test whether offering bonuses to top-performing hospitals would improve safety, quality, and efficiency of care.

"These Premier results show that value-based purchasing can achieve excellent results in Medicare," Kerry Weems, acting CMS administrator, said in a statement. "Given these results, it is time to take the next step and implement hospital value-based purchasing for the Medicare program so that citizens across the nation can benefit from improved safety and quality."

CMS officials submitted a proposal to Congress last year that calls for the implementation of value-based purchasing for hospitals within Medicare. Under the plan, a percentage of

each hospital's payment per discharge would be tied to the hospital's performance on a set of clinical measures. New legislation would be required to implement these changes, according to the agency.

In the meantime, CMS has extended the hospital demonstration project for another 3 years.

During the first 3 years, hospitals in the top 20% in each of the five clinical areas received bonuses. The top 10% of hospitals received a 2% incentive payment; those in the second decile received a 1% payment. And all hospitals that performed in the top 50% in each clinical area received public recognition on the CMS Web site. Beginning with the fourth-year results, hospitals also will be rewarded for meeting a certain quality threshold.

From October 2003 to the end of 2006, hospitals on average showed improvements for all five high-volume inpatient conditions, based on an aggregate of all quality measures in each clinical area.

For example, the average composite quality score rose from 87% to 96% for patients with acute myocardial infarction, from 85% to 97% for patients undergoing coronary artery bypass graft, and from 64% to 89% for patients with heart failure. For patients with pneumonia, the composite quality score rose from 69% to 90% for hospitals in the demonstration project. In addition, the composite quality score rose from 85% to 97% for patients who underwent hip and knee replacement.

In the third year of the demonstration project, which ended in 2006, CMS awarded a total of $7 million in incentive payments to 112 top-performing hospitals. Over the course of the first 3 years of the project, CMS has paid out more than $24.5 million in incentives. ■

CMS Plans Five-Star Rating System for Nursing Homes

BY MARY ELLEN SCHNEIDER
New York Bureau

The federal government will soon be rating the nation's nursing homes on a five-star quality scale.

Kerry Weems, acting administrator for the Centers for Medicare and Medicaid Services, announced the plan during a teleconference. The new, simple rating system will give patients and their families an easy way to evaluate quality at the nation's nursing homes, said Mr. Weems.

Officials will spend the next few months figuring out how to determine the number of stars a facility deserves. Mr. Weems said the agency will base the system on existing data sources including annual inspections of the facility, information on 19 quality measures, and staffing data. But he added that he's open to incorporating other consistent, accurate, and reliable data sources.

The task between now and December of this year, when the CMS plans to have the rating system up and running on its Nursing Home Compare Web site, is to determine how to weight data to distinguish high- and low-performing facilities, Mr. Weems said. The CMS is seeking comments on how to make the system informative and user friendly.

Last year, the CMS instituted a star rating system for Medicare Advantage plans. However, this will be the first star system introduced to the Medicare fee-for-service program, according to the CMS.

"Transparent information is an effective incentive for quality," Mr. Weems said.

The American Health Care Association, a federation of state health organizations representing long-term care providers, welcomed the new system. However, the group cautioned that relying heavily on survey data is not the best way to assess quality. CMS officials should also consider incorporating metrics such as consumer and staff satisfaction, the organization said in a statement.

Sen. Herb Kohl (D-Wis.), who as chairman of the Senate Special Committee on Aging has been pushing the CMS to increase nursing home–quality information on the Web site, commended Mr. Weems for the new plan.

In a prepared statement, however, Sen. Kohl raised the issue that some of the data that will go into the star ratings are not objective measures. "Some of this information is self-reported [by nursing homes], and could be made more reliable, but we are moving in the right direction," he said.

Comments on the system can be sent to bettercare@cms.hhs.gov. ■