Dramatic Increase in Nonmelanoma Skin Cancer

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March 24, 2010 — The number of nonmelanoma skin cancers (NMSCs) increased dramatically in the United States from 1992 to 2006, according to a new study published in the March issue of the *Archives of Dermatology*. It found that the overall number of procedures for NMSC among Medicare patients rose by 76% during that time, from 1,158,298 in 1992 to 2,048,517 in 2006.

This represents an epidemic of NMSC, said lead author Howard Rogers, MD, PhD, who practices dermatology in the Advanced Dermatology Center in Norwich, Connecticut.

"We define an epidemic as a disease process that affects a large proportion of the population and that keeps on increasing," Dr. Rogers told *Medscape Oncology*, "and this shows no signs of leveling off."

Most Complete Study to Date

The current report is the most complete study to date on NMSC, according to the authors, confirming what dermatologists have been seeing in their offices for the past couple of decades. "In the dermatology community, we knew that skin cancers were going up and we wanted to quantify that observation a bit better," Dr. Rogers explained. "Part of the reason we did the study is that there's been no attempt to quantify NMSC since 1994, and methodologies and available data were much more limited then."

NMSCs are not typically reported to cancer registries, so it is difficult to track the exact incidence, Dr. Rogers explained. Although there have been several reports of increases on a state or regional level, the last national report on American trends was published in 1994.

"NMSCs are our most prevalent cancers and we have very few data on incidence or other factors because of the way these cancers are assessed," said June Robinson, MD, professor of clinical dermatology at Northwestern University in Chicago, Illinois, and editor of the *Archives of Dermatology*. In an interview with *Medscape Oncology*, she said that "this study provides critical benchmark data about the incidence of NMSC, which we anticipate will only increase as the population ages. Data like these can really help us look at the allocation of healthcare resources."

Based on Medicare Data

Dr. Rogers and his colleagues conducted the study using data from 2 Medicare databases and national surveys. The Medicare data provided both current data and a huge sample size, which provides strong estimative power. Such information tends "to be very accurate because it looks closely at every person treated by Medicare during that year," Dr. Rogers said.

The study defined NMSC incidence in 2 ways: as newly diagnosed NMSCs, and as people with newly diagnosed NMSCs (a person can have more than 1 NMSC). Incidence was looked at somewhat indirectly, by calculating the total number of approved skin cancer treatments in the Medicare total claims dataset. The majority of the skin cancers assessed in this study were keratinocyte carcinomas (i.e., basal cell or squamous cell carcinomas or squamous cell carcinoma in situ*).* However, procedures for other skin cancers, which occur in much smaller numbers — such as Merkel cell carcinoma, anneal carcinoma, and malignant melanoma in situ — were also included in the analysis.

Although the aging of the American population might have something to do with the increase in skin cancer, when the investigators took age into account, procedure rates had still doubled over the study period. In 1992,

the age-adjusted procedure rate per 100,000 Medicare beneficiaries was 3,514; in 2006, that number had increased to 6,075.

These rapid increases can be indirectly attributed to age, particularly as it relates to the changes in behavior patterns with regard to lifestyle and sun exposure that took place after World War II in the United States. More prosperous lifestyles and a change in attitude toward tanned skin had people flocking outdoors and to the beach, Dr. Rogers reported. "Prior to this time, people really valued pale skin. Now we have a love affair with the sun," said Dr. Rogers. "And the baby boomers are all getting to the skin cancer age."

Dr. Robinson agrees. "Prior to World War II, most UV radiation exposure — which encompasses both natural sunlight and indoor tanning — was mostly occupational," she noted. "Then, in the 1950s, we see the beginning of an enormous increase in what I like to call intentional tanning or deliberate sun exposure. We saw increases in melanoma about 20 years after that."

Sun exposure is the key factor related to the development of skin cancer, and the risk for skin cancer also rises with the use of tanning beds, which are growing in popularity. Most alarming, said Dr. Rogers, is the rise in skin cancers in patients in their teens. "I've recently treated skin cancers — basal cell carcinoma and melanoma — in 16- and 17-year-old patients," he said. "These kids are using tanning beds."

Investigators took into account how changes in practice patterns over the past couple of decades might have affected the findings. To analyze this, the investigators looked at the number of procedures per patient. Data were only available from 2002 to 2006 (because of the ability to link to patient demographic data). During this period, the number of procedures for NMSC increased by 16%; the number of procedures per affected patient increased by 1.5% and the number of people with at least 1 procedure increased by 14.3%. After adjustment for the number of procedures per patient, trends were stable during the last 4 years of the study period; there were 1.61 procedures per patient in 2002, and 1.63 procedures per patient in 2006.

"We have definitely seen changes in patterns of procedures and we are doing studies to look more closely at this," noted Dr. Rogers. "We also might be seeing more of these skin cancers because of intensive public-awareness campaigns by the American Academy of Dermatology on the detection of skin cancer and the importance of self-exams."

Although mortality from NMSC tends to be very low, clearly the morbidity related to these skin cancers is very high. "But it's important to remember that we don't have great data on NMSCs because they aren't reportable," emphasized Dr. Robinson. "So we don't know about quality of care or quality of life as it relates to this disease. These factors may be very different for the 30 year old who walks in with a squamous cell carcinoma and who has never been sick a day and the 80 year old who has other medical conditions and might be less impacted."

Dr. Rogers added that, in the current healthcare environment, everyone wants to get more healthcare for less money, and the cost of treating skin cancer is going up, so the importance of continued national research and programs on treatment, education, and prevention — particularly with regard to sun exposure and sun-screen use — cannot be emphasized enough.

Dr. Rogers and Dr. Robinson have disclosed no relevant financial relationships.

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