

Guest Editorial

The New Melanoma Staging System

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Not another staging system! This was the common response among dermatologists and oncologists when word came that a new melanoma staging system was in the works. Over the past few decades, evolving knowledge has resulted in several iterations of the melanoma staging system. This has created significant frustration and confusion among patients and physicians alike. The uncertainty may soon diminish with the latest version of the American Joint Committee on Cancer's (AJCC) melanoma staging guidelines, finalized in August 2001 and available for general use as of 2002.

Prior to the 1980s, no universally accepted staging system for melanoma existed. The first internationally recognized melanoma-staging system was developed in 1983 by the AJCC and the Union Internationale Contre le Cancer. Subsequently, multiple revisions and reclassifications were incorporated. Despite these modifications, numerous flaws and inconsistencies were found in the 1997 version of the staging system, which limited its usefulness in clinical practice and clinical trials. An ambitious mission was initiated in 1998 to redesign the melanoma staging system to provide a practical and reproducible system that properly reflects the biology of melanoma. This vision will become official with publication of the sixth edition of the *AJCC Cancer Staging Manual*. (Anticipated release date is May 2002).

The new staging system is soundly evidence based. The new recommendations from the international multidisciplinary Melanoma Staging Committee were developed after compilation and analysis of complete prognostic factor data from melanoma patients worldwide. This project represents an unprecedented cooperative effort among groups and cancer centers worldwide that collectively spans a clinical experience of over 40,000 melanoma patients. These long-awaited improvements in the staging system offer the most accurate assessment of melanoma prognosis to date.

One example of a more practical staging system is reflected in the T-category thresholds of melanoma thickness. The previous thresholds for T-classification in melanomas were defined as 0.75 mm, 1.5 mm, and 4 mm, which was recommended empirically by Breslow in 1970. The new thresholds are integers (ie, 1.0, 2.0, and 4.0 mm) and represent not only a

statistical best fit, but are also compatible with the current threshold in clinical decision making.

Because of the histologic nature of several newly incorporated prognostic factors, pathologic analysis will play a larger role than ever in the new system. The new system inaugurates the use of ulceration as a prominent staging criterion. For a given T subclass, the presence of ulceration will place the disease in the next highest subclass. In addition, for the first time in melanoma staging a serum factor lactate dehydrogenase level will be incorporated in patients with distant metastatic disease. Presence of elevated serum lactate dehydrogenase seems to predict a worse prognosis and will be assigned to the highest M subclass, regardless of where the metastases are located.

Sentinel node biopsies are also incorporated into the new staging system. They are now routinely performed on patients with tumors at least 1 mm thick; therefore, most patients will have some type of pathologic information available. In addition, the number of lymph nodes with disease present was more significant on a prognostic basis than the size of the large metastasis.

With the advent of polymerase-chain reaction (PCR) evaluation of sentinel node biopsies and the progress of serologic markers for early metastasis (ie, reverse-transcriptase-PCR tyrosinase mRNA), the melanoma staging system could become even more intricate. However, as we continue to apply the methodology of the evidence-based medicine, we will also make the prognosis more accurate and therapies more direct.

The statistical power from this collaborative endeavor approaches that of a cardiology-based study, which has been the darling of evidence-based medicine. With the growth of technology, future studies in dermatology will be able to utilize the mathematical power of computers along with the statistical power of patient numbers from worldwide collaborations.

Despite the concern of its complexity, this new melanoma staging system allows more precise classification and improves the accuracy of predicting the likely prognosis and outcomes for individuals with the disease. It will also provide greater consistency for melanoma investigation worldwide. Lastly, validation studies are needed to confirm the accuracy of this revised staging system.