

Epidemiology and Clinical Presentation of Melanoma

Presented by Dr. David Goldberg, MD, JD

Melanomas arise from melanocytes and lead to more than 75% of skin cancer deaths. The incidence of melanoma has increased over the past 40 years by three to five times, however, mortality rates began to stabilize in the early 90's. There is a very low prevalence of melanoma in skin of color but is the most rapidly increasing cancer in white populations, with lower rates in Mediterranean countries and higher rates in Scandinavian countries. The highest incidences exist in Australia and New Zealand.

The Breslow Depth measures the vertical depth of tumor cells and is the most important prognostic factor in primary melanoma. The higher level of depth, the higher the rate of mortality. Superficial spreading and nodular melanomas have the strongest association with melanocytic nevi counts, while lentigo maligna melanoma has strongest association with skin type and hair color. Atypical melanocytic nevi are the greatest independent risk factor for sporadic melanoma, with relative risk 32 times higher when there are 10 or more. About 80% of melanomas develop intermittently in sun-exposed regions, however the anatomic distribution of melanoma do not closely match sites of greatest cumulative sun exposure. Melanoma occurs more often in middle-aged adults rather than elderly adults. Duration of sun exposure is an even stronger risk factor for development than are sunburns. Ultraviolet B rays are associated with stronger risk than ultraviolet A, and tanning bed exposure before age 35 is a predictor.

Superficial spreading melanomas comprise 60% to 70% of melanomas and are most commonly on the trunk. Half of those occur in a pre-existing nevus. Nodular melanoma is the second most common type and are most common in the sixth decade of life, have a rapid vertical growth phase and poor prognosis. Lentigo maligna represent 10% of melanomas, are very slow-growing and most commonly found on the face. Acral lentiginous melanoma make up 5% of all melanomas and most frequently present in the seventh decade with incidence similar across all racial groups. They are often diagnosed in advanced stages and present with Hutchinson's sign. Amelanotic melanomas are often mistakenly biopsied as BCCs and clinically look like scars. Hormones of pregnancy stimulate melanocytes, resulting in over 10% of women having darkening of melanocytic nevi in the first three months of pregnancy without association of greater melanoma risk. Transplacental metastases are very rare as is childhood melanoma – Spitz nevus features are more common in this age group.

Genetic Approaches to the Prognosis of Melanoma

Presented by Dr. Darrell Rigel, MD

Skin cancer rates are rising dramatically; at the current rate, 1 in 42 Americans will have an invasive melanoma during their lifetime. Approximately, 1 in 21 Americans will have an invasive or in situ melanoma in their lifetime. Moreover, one American dies of melanoma every hour. The degree of advancing melanoma affects prognosis. The bottom line is that early detection is key.

Assessing melanoma prognosis with traditional approaches:

1. Lesion volume (depth times diameter) is superior to thickness
2. Observe sentinel lymph node involvement

Genomics is a novel adjunct to the standard of care. The 31-gene expression profile (31-GEP) test for melanoma identifies a genomic profile and divides patients into low-risk (class 1) or high-risk (class 2), with regard to likelihood of developing melanoma recurrence or metastasis within five years. The data is compelling; several studies have validated the utility of 31-GEP test for melanoma prognosis and sentinel lymph node biopsy (SLNB) decision-making. Specifically, combining 31-GEP and the American Joint Committee on Cancer's staging system demonstrated a synergistic effect to accurately identify recurrence, distant metastasis and mortality. Class 1A patients could avoid SLNB, class 1B and 2A patients can consider SLNB, and class 2B patients should be offered SLNB. The 31-GEP test has a significant impact on management due to avoiding unnecessary surgical procedures in low-risk patients, increasing yield from SLNB procedure and lowering healthcare costs.