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A combined clinicopathologic and gene expression model (CP-GEP) identifies primary cutaneous melanoma patients who can safely forgo sentinel lymph node biopsy

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More than 80% of patients undergoing sentinel lymph node (SLN) biopsy have no nodal metastasis, and are unnecessarily exposed to procedure-induced morbidity such as lymphedema. Our objective was to develop a model combining clinicopathologic and gene expression (CP-GEP) to discriminate high-risk patients from patients who can safely forego SLN biopsy, thus reducing procedure-associated morbidity, and prioritizing care for high risk patients. A panel of 108 candidate biomarkers was identified, and the expression of these genes was quantified in FFPE diagnostic biopsy tissue across a cohort of 754 patients; 128/754 (17%) SLN positive patients. All patients underwent SLN biopsy at Mayo Clinic within 90 days of diagnosis between 2004 and 2018. We trained logistic regression models, using a penalized maximum likelihood estimation algorithm, in a repeated cross-validation scheme. The CP-GEP model, combining age and Breslow depth with genes involved in extracellular matrix remodeling (glia-derived nexin, growth differentiation factor 15, integrin $\beta 3$, interleukin 8, lysyl oxidase homolog 4, TGFβ receptor type 1 and tissue-type plasminogen activator), and melanosome function (antigen recognized by T-cells), outperformed models based on only clinicopathologic variables, or only on gene expression, in discriminating SLN positive and negative patients (AUC, 0.82, 95% CI 0.78-0.86). The CP-GEP model achieved a SLN biopsy reduction rate of 42% at a negative predictive value of 96%. The 5-year relapse-free survival for CP-GEP negative patients was 88% compared with 50% for CP-GEP positive and SLN positive patients, confirming the value of the CP-GEP model as a tool to inform SLN biopsy decisions.

Commercial disclosure: None identified.

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A retrospective analysis of the duration of long-term oral antibiotic use for the treatment of hidradenitis suppurativa

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Hidradenitis suppurativa (HS) is an inflammatory skin condition often treated with oral antibiotics. The duration of use in clinical studies is typically 12-16 weeks, however it is possible that longer durations are used in clinical care. This study aimed to investigate the duration of long-term oral antibiotic use for the treatment of HS. The MarketScan database was queried for patients with a diagnosis of HS from January 1 through December 31, 2005. Antibiotic use and duration was determined using National Drug Codes. Courses ≥30 days were included. Overall, 9293 people with HS were identified; partial results are reported on 1470 HS patients with 1725 drug courses. The mean duration of treatment was 44 days. The majority of courses (55.7% [960/1725]) were 30 days or longer, but few were longer than 3 months (4% [n = 41]) or 6 months (0.5% [n = 5]). Tetracyclines were the most frequently prescribed (45% [n = 429]), followed by cephalosporins and other antibiotics (ie, trisulfamethoxazole, clindamycin, rifampin, and dapsone). Single agent therapy was more common than combination therapy (3% [n = 26]). Our results show that the majority of oral antibiotic courses have durations less than 90 days consistent with antibiotic stewardship found in guidelines for other dermatologic conditions. Limitations of the study include lack of data regarding patient adherence or information on HS severity and clinical outcomes. In addition, the cumulative effect of courses <30 days was not assessed. Further research is needed to investigate the clinical outcomes associated with length of use, determine optimal duration, and assess effects on antibiotic resistance.

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A retrospective multicenter study of fatal pediatric melanoma

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Background: Melanoma in the pediatric population is rare, with distinct presentation compared with adult disease. Diagnosis is based on histopathologic features and can be challenging, often defying consensus among experts. Given the rarity of pediatric melanoma, it is helpful to evaluate fatal cases to identify clinical and histopathologic features that characterize an aggressive course.

Methods: Multicenter retrospective study of patients <20 years of age diagnosed with melanoma from 9/1/1994 to 1/1/2017 from 11 academic medical centers.

Results: Thirty-eight cases of fatal pediatric melanoma were identified; patients were 42.1% male, 57.9% female, 55.3% Caucasian, and 21.1% Hispanic. The average age at diagnosis was 12.7 years (SD = 6.3), and among 37 cases with available date of death, the average age at death was 15.5 years (SD = 7.2). Patients survived an average of 33.9 months (SD = 29.4) from time of diagnosis. Of the 38 cases, 23.7% were diagnosed during childhood (age <11 years) and 76.3% during adolescence. Melanoma subtypes included nodular (21.1%, n = 8); superficial spreading (13.2%, n = 5), and Spitz melanoma (7.9%, n = 3); twenty-two cases were not able to be identified by conventional histopathologic subtypes. One-third (11 of 33) of melanomas arose from a congenital melanocytic nevus, most of which (5 of 6) were clinically identified as large or giant congenital nevi.

Discussion: Pediatric melanoma has diverse clinical presentations, a variety of which can be aggressive and ultimately result in death. Description of fatal cases allows better characterization of aggressive melanomas in the pediatric population and may allow for risk stratification in the future.

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Extramammary Paget disease of the eyelid with clivus malignancy

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Extramammary Paget disease (EMPD) was originally described in 1889 by Crocker, who reported genital lesions histologically similar to those described by Paget in 1874. EMPD is a rare intraepithelial adenocarcinoma that affects body parts with abundant apocrine glands. Primary form is the most common, originating in the epidermis or cutaneous adnexa. Secondary form, less often, occurs in association with an underlying malignancy, usually of the lower gastrointestinal or urinary tract. EMPD is an uncommon neoplasm, which occurs mostly in the anogenital region, but can arise in other areas of skin or mucosa. It comprises 2% or less of primary vulval neoplasms and is even rarely in other sites. There are reports of EMPD arising in other areas, such as axilla and ear. The first description of EMPD of the eyelid was made by Hagedoorn in 1937, related with previous trachoma and posterior developing of eyelid carcinoma. After that, Whorton described in 1955 a case of EMPD of the eyelid related to carcinoma of Moll glands. The purpose of this report is to describe a case of EMPD of the eyelid in a 60 year female patient, who was also diagnosed with clivus malignancy. She presented an erythematous, exulcerated and squamous lesion on the ocular area, eyelids and cheek. Histologic analysis showed EMPD disease from different samples.There were scars, caused by previous surgeries, and an eye prosthesis after the treatment of clivus malignancy. Besides the lesion extension, she also presents undefined intracranial lesions and the treatment plan is a challenge.

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