Mass spectrometry imaging in the diagnosis of difficult atypical spitzoid neoplasms

Rossitza Lazova
Yale University School of Medicine, USA

Background: In a previous study using Mass Spectrometry Imaging (MSI), we discovered differences on a protein level between Spitz nevi and Spitzoid malignant melanomas.

Objective: The objective is to investigate whether MSI can help in the differentiation between benign melanocytic nevi (BMN) and conventional malignant melanomas (MM).

Methods: Archival formalin-fixed, paraffin embedded tissue samples from 51 BMN and 54 primary cutaneous MM were analyzed by MSI to identify proteomic differences. After obtaining mass spectra from each sample in the teaching set comprising 25 nevi and 25 melanomas, statistical correlation models were generated using a genetic algorithm. A combination of peaks that separates best between benign nevi and malignant melanomas was established. A diagnosis of either nevus or melanoma was rendered on a separate validation set of 26 nevi and 29 melanomas based on the proteomic signature, which diagnosis was then correlated with the histopathologic diagnosis and clinical behavior.

Results: MSI classified 28/29 cases of MM and 22/26 BMN correctly. The sensitivity for recognizing melanomas was 97% and specificity was 85%.

Conclusions: MSI can differentiate between BMN and MM based on proteomic differences. MSI is an objective and reliable method that may be helpful in difficult cases, in which rendering a firm diagnosis of either benign nevus or malignant melanoma may be very difficult. The identification of protein expression profiles, which discriminate between BMN and MM, may lead to the discovery of clinically useful protein biomarkers and translate into tumor biomarkers that can be incorporated into standard diagnostic and treatment strategies.

rossitza.lazova@yale.edu

Application of Mohs micrographic surgery appropriate-use criteria to skin cancers at a university health system

Mark A Russell
University of Virginia, USA

Skin cancer is the most common type of cancer in the United States and various countries around the world. Mohs micrographic surgery (MMS) is an effective treatment for skin cancer but one of many treatments that can be used. Until recently, it has been difficult to determine the percentage of skin cancers best treated with MMS. The appropriate-use criteria were developed by the American Academy of Dermatology in 2012 as a consensus of expert opinion and represent an opportunity to more accurately estimate this number. We sought to apply the appropriate-use criteria retrospectively to University of Virginia Health System skin cancers so as to determine the proportion that met appropriate use within 8 months. A list of all biopsy-proven skin cancers, excluding invasive melanoma, at the University of Virginia Health System during an 8-month period was generated. Patient and tumor data were collected retrospectively from hospital records and each skin cancer was classified as appropriate, inappropriate, or uncertain based on the appropriate-use criteria. Among 1059 skin cancers, MMS was appropriate in 72.0% of cases, inappropriate in 20.4%, and uncertain in 7.6%. Altogether, 59.3% of skin cancers occurred in H and M areas, which include the head, neck, hands, feet, ankles, genitalia, nipples/areola, and pretibial surface. These results provide insight into the potential demand for MMS at this institution but also other academic institutions.

mr2h@virginia.edu

J Cancer Sci Ther
ISSN: 1948-5956 JCST, an open access journal

Melanoma 2016
July 14-15, 2016

Volume 8, Issue 6(Suppl)

Page 53