



Proceedings

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Objective Ki-67 Index Quantification In Non-Breast Tumors – Preliminary Data In Timisoara, Romania

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Introduction/ Background

The immunohistochemical expression of the Ki-67 protein is routinely used for diagnostic and grading purposes of various tumors. The most common use of automation process for Ki-67 quantification is represented by breast tumors.

Aims

We aimed to analyze the accuracy of digital quantification of Ki-67 expression in non-breast tumors.

Methods

We selected all the available Ki-67 stained slides done in 2014 at the County Emergency Hospital Timisoara, Romania, excluding breast tumors. Images of the stained slides (10 images/slide on average, depending on the size of the specimen) were acquired on a Leica DMD108. We performed preprocessing (autolevels) in IrfanView and Ki-67 quantification in Fiji (ImageJ distribution) using ImmunoRatio plugin.

Results

Proper image segmentation was identified on 25 cases. The best segmentation was obtained in lymphoid and central nervous system (CNS) tumors. Lower Ki-67 values than the ones manually reported were identified in 16/25 cases (64%). Interestingly, digital quantification showed all 7 lymphoid cases to have a lower Ki-67 index than manually reported, while 6/9 CNS had higher Ki67 indices using automation processing. Valid digital quantification was not possible on skin, cervical and urothelial tumors, as regions of interest could not be defined to restrain the area to be evaluated.

Conclusion: Our preliminary study shows that ImmunoRatio plugin for Fiji in combination with IrfanView preprocessing are free, easy to use and powerful tools to obtain an objective Ki-67 index in non-mammary tumors: CNS, lymphoid, soft tissue, neuroendocrine tumors, choriocarcinomas and malignant melanomas.