

One-Step Nucleic Acid Amplification, are we witnessing a rise of a new method in nodal assessment?

Kost'un J., Bouda J., Vlasák P. and Presl J.

Department of Gynecology and Obstetrics, University Hospital in Pilsen, Charles University, Czech Republic

Background: Lymph node (LN) status is one of the most important prognostic factors in gynecologic cancer. Moreover, in patients with cervical and vulvar cancer, intraoperative LN assessment is important for relevant decision-making regarding therapy. One-Step Nucleic Acid Amplification (OSNA), a rapid molecular analysis (within 16-30 minutes) of the whole LN by quantification of CK19 mRNA expression, should decrease the risk of undertreatment resulting from missing metastatic nodal burden. We performed a review of studies relevant to OSNA and focused on its perspective in gynecologic oncology.

Methodology: We searched the PubMed for all articles containing keywords "OSNA" or "One-Step Nucleic Acid Amplification" in the title or abstract published until 4/2019. We focused on gynecologic oncologic papers and analysis of their results.

Results: Since 2006, 157 articles were found. OSNA was tested in breast, colorectal, lung, gastric, head-neck, thyroid, endometrial, cervical and prostatic cancer. OSNA achieved certification for use in breast, colorectal and gastric cancer (currently used in more than 300 hospitals worldwide). Five papers were published in the field of gynecologic oncology. Four articles are comparing OSNA and standard histopathology in examining the LNs in endometrial cancer, one in cervical cancer. In the paper, Kost'un et al, published 2019, even ultrastaging of sentinel LNs in endometrial cancer was used as the reference method. While ultrastaging detected 8,15% (11/135) of the LNs as metastatically involved, OSNA detected 28 positive LNs 20,69% (28/135), $p \leq 0,0033$.

Conclusion: OSNA has already been certified for LN assessment in breast, colorectal and gastric cancer. So far published data indicate high level of sensitivity and specificity even in comparison to ultrastaging, thus providing reassurance in detection of even very small metastases. Nevertheless, more statistically significant data is needed for acceptance of OSNA in routine LN analysis in gynecological cancers. Our department is currently working on prospective trials applying OSNA in endometrial and cervical cancer.

Disclosures: The authors declare that there are no conflicts of interest.

