



## EDITORIAL

# TOWARDS PERSONALIZED MEDICINE

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In spite of the significant progress in the treatment of cancer patients, especially different forms of chemotherapy, its effectiveness is still not enough satisfying. It is believed that individual management of each patient, the so called personalized medicine, determines the effectiveness of therapy. In patients with cancer disease it should start already at the beginning when the complex diagnosis is performed that includes laboratory testing. Properly selected laboratory tests, especially in the early stage of cancer disease, may add valuable information when the clinical diagnosis is to be done but also during monitoring of treatment and estimating the patient's prognosis.

The optimal management of patients with different types of cancer requires measurement of specific tumour markers (1). However, they are in general of little value in the early detection of cancer. One exception may be HE4, a new promising marker for ovarian cancer, which in contrast to CA 125 seems to be more sensitive in the early stage of disease (2). Most tumour markers are particularly useful following a diagnosis of malignancy for selection of optimal therapy, surveillance following surgery and monitoring treatment in advanced disease (1). In modern oncology and personalized therapy laboratory testing is based mainly on the molecular biology tests. Their results are important in the decision making process for choosing the right treatment and optimal drug selection. We may expect that the future of personalized medicine/therapy will rely on molecular biology testing.

Currently available tests for evaluation of HER2 gene amplification in patients with breast cancer or gastric cancer and recent data on novel biomarker BRAF in metastatic melanoma allow individual treatment of patients with the specified biological therapy.

However, one cannot forget the basic routine hematology and biochemistry profiles which are of great importance in cancer patients that allow evaluation of possibilities to continue specific pharmacotherapy, rapid detection of possible complications and ensure the optimal comfort of life. Proper and careful interpretation of basic routine laboratory tests is essential for better management of patients with cancer disease, including modifications of previously chosen treatment or even its discontinuation. The costs of laboratory tests are significantly lower than the expenses of chemotherapy or other types of treatment thus allow more rational and more efficient use of financial means in the health service budget.

**References**

1. Duffy MJ : Clinical utility of tumour markers : what the guidelines recommend. J Lab Diagnost 2010; 46: 283-91
2. Moore RG., Jabre-Raughley M., Brown AK. Et al: Comparison of a novel multiple marker assay vs the risk of Malignancy index for the prediction of epithelial ovarian cancer in patients with a pelvic mass. Am J Obstet Gynecol 2010, 203:1-6