Marija Balić: Liquid biopsy in cancer patients, a tool for diagnosis, prognosis or treatment decision

There is a growing interest in analysis of biomarkers circulating in peripheral blood of cancer patients, and the term liquid biopsy has been used as a synonym for diverse circulating markers including circulating tumor cells (CTCs), cell free DNA and particularly circulating tumor DNA (ctDNA), but also traditional tumor markers or others. CTCs have been shown to play a central role in tumor dissemination and metastases, which are ultimately responsible for most cancer deaths. Technologies that allow for identification and enumeration of rare CTC from cancer patients' blood have already established CTC as an important clinical biomarker for cancer diagnosis and prognosis. Whereas it can be assumed that the clinical utility of CTC will be fully realized once CTC can be reliably cultured to and proliferated as a biospecimen for precision management of cancer patients and for discovery of novel therapeutics, ctDNA holds a greater promise for clinical diagnostics, as has been shown recently in EGFR mutated lung cancer or PIK3CA mutated breast cancer. Moreover, CTC and ctDNA allow for better understanding of molecular processes involved in the progress of disease, including epithelial to mesenchymal transition, cancer stem cells, and metastasis.