From the Editor

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The current AJHO features a summary and set of recommendations for follow up imaging in patients on treatment for metastatic breast cancer by Drs Shachar and Muss that has much applicability to all advanced solid tumor management. This review is very helpful in setting practice guidelines and aiming for value-based care. However, it highlights the fact that despite all of the advances in novel therapeutics and molecular assays, little progress has been made in monitoring patients other than to confirm clinical progression, response, or stability over time. Predicting whether a drug will be successful or not prior to clinical symptoms or tumor growth could prevent unnecessary toxicities and could also quickly introduce the most effective drug from a list of potential options. Blood-based assays, in particular, the enumeration of circulating tumor cells (CTCs) prior to or after chemotherapy for advanced disease is a powerful predictor of survival; however in a trial that compared early treatment switching in patients with high CTC counts before and after therapy, outcomes were no different compared to conventional imaging on a routine schedule.[1] However, newer techniques that allow sensitive and quantitative assessment of tumor-specific DNA are now showing promise for not only monitoring disease, but also clonal evolution of drivers of drug resistance that may even point to the best next therapy.[2] Commercial blood-based testing for EGFR, ALK, KRAS and BRAF status testing for lung and colorectal cancer and melanoma are now becoming available with the demonstration of good concordance with tumor assays, although much further validation will be needed. Functional imaging such as with PET scanning where dual tracers that measure both metabolic activity (^{18}FDG [fluoro-2-deoxy-D-glucose]) and receptor status (^{89}Zr-trastuzumab) in patients with advanced HER2+ breast cancer receiving T-DM1 (ado trastuzumab emtansine) very interestingly demonstrated both response prediction with early changes in FDG uptake and intra and inter-tumoral heterogeneity (the latter two also correlating with response), but this area will certainly need further confirmatory prospective study.[3]

While we all need to adhere to best evidence imaging for metastatic disease, there is much excitement on the horizon that will further personalize how we choose initial treatment and optimize follow up for advanced malignancies. While these blood and/or imaging modalities may introduce more complexity and costs, they may ultimately save cost, and more importantly, allow better treatment selection with every successive line of therapy.

REFERENCES

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