

Adapted Choi-criteria can reflect early therapy response to BRAF-inhibitor therapy better than does RECIST

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Aim

Targeted therapy can lead to considerable tumor reduction and may result initially in altered tissue at constant tumor size. In this setting RECIST can be inadequate for assessing early treatment response. Choi-criteria combine both size and density measurements. Our purpose was to evaluate computed tomography (CT) images of melanoma patients under BRAF-inhibitor therapy according to Choi-criteria which were adapted to our study (aChoi).

Methods

12 patients with stage IV melanoma treated with a BRAF-inhibitor were included. Response was assessed according to RECIST for in total 39 lesions in contrast-enhanced CT. Density measurements of targets to apply aChoi-criteria are based on semi-automatically volume segmentation, thus using a 2D non-standardized ROI could be prevented.

Results

8 patients are RECIST-responder. aChoi-criteria indicate therapy response earlier compared to RECIST in 5 of 8 patients.

In 7 cases tumor density in CT had decreased 8 weeks after therapy start while in some cases tumor size diminished less or even increased. Response according to aChoi was diagnosed in 7 patients who showed in RECIST-evaluation stable disease in 5 and partial response in 2 cases. 15 weeks after therapy start almost all patients within the aChoi-responders were RECIST-responder, too. Only one aChoi-responder showed still stable disease in RECIST.

Conclusion

Our initial data indicate that aChoi-criteria can reflect response to vemurafenib earlier compared to RECIST. This is of clinical significance as BRAF-inhibitors are cost-intensive targeted therapies and can cause severe side effects, so criteria for early therapy response have to be evaluated.

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