

POSTER PRESENTATION

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Whole-body diffusion-weighted MRI for staging of women with cancer during pregnancy: a pilot study

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From International Cancer Imaging Society Meeting and 15th Annual Teaching Course (ICIS 2015) London, UK. 5-7 October 2015

Aim

To evaluate whole-body diffusion weighted magnetic resonance imaging (WB-DWI) for staging of women with cancer during pregnancy.

Methods

Twenty patients diagnosed with cancer during pregnancy underwent WB-DWI additional to conventional imaging in this prospective single centre study. Reproducibility of WB-DWI between 2 readers was evaluated using Cohen's κ statistics and accuracy was compared to conventional imaging for assessing primary tumour site, nodal metastases and visceral metastases. Histopathology after surgery or biopsy was the primary reference standard.

Results

Ten patients had breast cancer, 3 lymphoma, 2 cervical uterine cancer, 1 ovarian borderline tumour, 2 colon cancer, 1 lung cancer and 1 a conjunctival tumour. The WB-DWI readers showed very good agreement for lesion detection, $\kappa = 0.94$. With WB-DWI, reader 1 detected 38 of 41 malignant lesions, reader 2 thirty-nine lesions and conventional imaging 27. WB-DWI showed sensitivity of 95% (95% CI: 74-99) for both readers and specificity up to 99% (95% CI: 76-99) compared to 50% sensitivity (95% CI: 28-72) with 100% (95% CI: 97-100) specificity for conventional imaging. For staging distant metastases, WB-DWI sensitivities were 66.7% (95% CI: 13-98) and 100% (95% CI: 40-100) respectively for reader 1 and 2 with specificities of 94.1% (95% CI: 69-

99) and 100% (95% CI: 40-100) compared to sensitivity of 33.3% (95% CI: 1.7-87) and specificity of 100% (95% CI: 77-100) for conventional imaging.

Conclusion

WB-DWI is feasible for single-step non-invasive imaging based cancer staging during pregnancy showing additional value to conventional imaging procedures for detecting distant and nodal metastases.

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Published: 2 October 2015

doi:10.1186/1470-7330-15-S1-P50

Cite this article as: Dresen et al.: Whole-body diffusion-weighted MRI for staging of women with cancer during pregnancy: a pilot study. *Cancer Imaging* 2015 15(Suppl 1):P50.

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