EDITORIAL

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Hybrid Imaging- Abbreviated and Ultrafast MRI

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Magnetic Resonance Imaging (MRI) of Breast is the most sensitive imaging test for breast cancer detection, diagnosis and superior to conventional imaging with mammography, tomosynthesis and ultrasound. Relatively high costs, long examination and prolonged interpretation time hinders breast MRI to become a population-based mass screening tool. Thus, it becomes limited screening tool for women with increased risk of breast cancer.[1] Now a days, abbreviated MRI protocols substantially shorten the image acquisition and its interpretation time. Thereby, it allows higher patient throughput and increased cost effective potential with high diagnostic accuracy. The combination of ultrafast and abbreviated protocols provide required information for an accurate breast lesion/cancer diagnosis.[2] It is important to realize that the definitions of abbreviated and ultrafast MRI are not mutually exclusive. Basically, it can be considered that ultrafast MRI alone is a form of an abbreviated protocol with a short acquisition time. In most of the published on lesion classification, it is not yet clear whether ultrafast MRI alone is good enough for breast screening.[3] But when ultrafast acquisition combines with an abbreviated MRI protocol, that inserts high temporal resolution prior to the acquisition of the first postcontrast sequence. This would allow for the fast evaluation of the entire protocol by evaluating the Maximum Intensity Projection (MIP) image and the high-resolution subtraction series. Ultrafast high temporal resolution sequences provide additional dynamic information in the presence of lesion. The better information obtained from the novel wash-in characteristics from ultrafast imaging compared to the standard washout evaluation suggests that even with abbreviated ultrafast breast MRI protocols, the necessary kinetic information for an accurate breast cancer diagnosis can be obtained along with valuable morphologic information.[3-5] Although further large-scale studies and standardization of imaging protocols are necessary, it is suggested that abbreviated and ultrafast MRI protocols appear to be feasible as a cost-effective and population based breast MRI screening tool.

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REFERENCES

1. Sammet S. Magnetic Resonance Imaging (MRI). In: Maqbool, M. (eds) An Introduction to Medical Physics. Biological and Medical Physics, Biomedical Engineering. Springer, Cham, 2017. https://doi.org/10.1007/978-3-319-61540-0_9.
2. Thomas K, Sabharwal N. Nuclear imaging. Medicine. 2022; 50 (6): 363-366. ISSN 1357-3039. https://doi.org/10.1016/j. mpmed.2022. 03.003.

3. Tabar L, Vitak B, Chen THH, Yen AMFY, Cohen A, Tot T, et al. Swedish two-county trial: impact of mammographic screening on breast cancer mortality during 3 decades. Radiology. 2011; 260: 658e63.
4. Kriege M, Brekelmans CT, Boetes C, Besnard PE, Zonderland HM, Obdeijn IM, et al. Magnetic resonance imaging screening study group. Efficacy of MRI and mammography for breast-cancer screening in women with a familial or genetic predisposition. N Engl J Med. 2004; 351(5): 427e37.
5. Kuhl CK, Schrading S, Leutner CC, Morak-kabati-Spitz N, Wardelmann E, Fimmers R, et al. Mammography, breast ultrasound, and magnetic resonance imaging for surveillance of women at high familial risk for breast cancer. J Clin Oncol. 2005; 23: 8469e76.