Mamma I Breast MRI in the era of imaging biomarkers: More than

RöKo International Freitag, 11.05.2018 von 8:00 bis 9:30 Uhr im Raum: Donner

Vorsitz / Moderation: Kuhl C / Aachen

**RÖKO INT 301.1**  
**DWI: Not only ADC**  
8:00 Uhr  
Referent(en): Baltzer P

**RÖKO INT 301.2**  
**Background Parenchymal Enhancement in Breast MRI: an imaging biomarker?**  
8:30 Uhr  
Referent(en): Gültekin S

**Kurzzusammenfassung:** Magnetic resonance imaging (MRI) has introduced the background parenchymal enhancement (BPE) concept in breast imaging. BPE is defined as the enhancement of breast glandular tissues on post-contrast dynamic sequences. BPE can be divided into four categories as minimal, mild, moderate and marked based on the qualitative visual assessment of enhancing glandular tissue according to BI-RADS® lexicon. Several factors like tissue perfusion, vascular supply to the breast, and hormone levels determine the BPE. The menstrual cycle influences BPE, the lowest BPE occurs in the second week of menstrual cycle. Initial reports assessed the impact of BPE on the diagnostic performance of breast MRI in the detection and evaluation breast cancer. With the known fact that some antihormonal therapies decrease BPE, the possible association between high levels of BPE and development of breast cancer has been studied. Some reports also noted the differences in the correlation of BPE with breast cancer risk between high and non-high risk patients. Besides, some recent literature suggests additional roles for BPE as an imaging biomarker not only for breast cancer risk, but also for prognosis and predicting response to chemotherapy. In these studies, they reported that BPE decreases under neoadjuvant chemotherapy, and the reduction of BPE following neoadjuvant chemotherapy correlates with the tumor response. It has been shown that the degree of BPE changes with the breast cancer treatment like radiotherapy. This presentation will aim to discuss the BPE as an imaging biological marker in many respects.

**Lernziele:** 1. To explain the value of BPE as an imaging biomarker.  
2. To describe the results of studies having different conclusions about BPE as a tool of imaging biomarker.

**RÖKO INT 301.3**  
**Role of breast MRI as a predictive tool in breast cancer patients**  
8:55 Uhr  
Referent(en): Yoon J
Kurzzusammenfassung: Magnetic resonance imaging (MRI) for the breast is a highly sensitive imaging method that is used as an additional screening or diagnostic tool to the conventional breast imaging of mammography and breast ultrasonography (US). In current practice, breast MRI is used for preoperative evaluation to predict disease extent, monitoring of response to chemotherapy, screening purposes in women at high risk for breast cancer, and post-treatment surveillances for recurrences (1). Similar to mammography and US, lesions detected on breast MRI exhibit various morphologic features that can be used for differential diagnosis as described in the American College of Radiology (ACR) Breast Imaging Reporting And Data System (BI-RADS) lexicon for breast MRI (2). Effort has been made to standardize and quantify the features detected on breast MRI as follows. For morphologic assessment, computer-aided evaluation has been used to quantify the morphologic features of breast masses detected on MRI, which has been reported to predict the aggressiveness of newly diagnosed breast cancers (3). In addition to the morphologic features, MRI exhibits dynamic enhancement characteristics, which allows extraction of semi-quantitative perfusion parameters, or perfusion (pharmacokinetic) parameters that enables measurement of microvascular structures of breast cancer (4, 5). Recent advances in ‘radiomics’, using data extracted from medical images converted into high-dimensional, mineable, and quantitative imaging features have been applied to evaluate tumor physiology (6, 7). During this talk, we will discuss the various analytic methods using breast MRI as a predictive biomarker in breast cancer patients.

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