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Radiologist as a Leader in the Diagnostic Process in Patients with Prostate Cancer

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Summary

Multiparametric MRI of the prostate gland is a relatively new diagnostic modality which is gathering a growing interest among urologists and radiologists. The second version of the PI-RADS guidelines enabled standardized imaging, evaluation and reporting of prostatic lesions. Nonetheless, since 2015 – when the PI-RADS v.2 was published, numerous questions regarding imaging of the prostate gland have appeared.

In January 2017, I had a pleasure to visit Radboud University Medical Centre (RUNMC) in Nijmegen, Holland which is a world-leading center for prostate imaging and research. I met professor Jelle Barentsz, who is the main author of PI-RADS [1], a professor of radiology, and Chair of a research department at RUNMC. Professor Barentsz heads also a worldwide network of MRI providers accredited by the Prostate Centres of Excellence (COE), which was also developed at RUNMC. It is an imaging team of radiologists and technicians trained in Holland by Prof. Barentsz and his team in the application of the RUNMC imaging protocol. Apart from that, during the course, participants are trained to produce structured reports that include key images and multiparametric data which are integrated with the written assessment of the radiologist.

Although the general principles of imaging used in Nijmegen are similar to those applied in Poland, there are also significant differences which drew my attention. The patients are examined on a 3T scanner without an endorectal coil. The minimal protocol (including T2W images in three planes, DWI and ADC maps, k-trans contrast enhancement) is applied for diagnostic purposes. On the other hand spectroscopy is used primarily for scientific purposes. Strong confidence is put on ADC values, although the reporting team bears in mind that the values may differ between scanners. Such a short protocol enables performing the imaging within 30 minutes. However, if there is a suspicion of prostate cancer based on diagnostic prostate

MRI, the patient undergoes MRI-guided biopsy within a couple of days. If there is a need to exclude distal metastases, PET-CT or whole-body MRI with a special contrast agent that is highly specific for prostate cancer [2] is performed without delay. In general, the whole diagnostic evaluation with establishment of further treatment can be performed within a week.

Clinical meetings with urologists, radiologists, radiotherapists, oncologists, and pathologists take place weekly. Each participant is encouraged to share his or her opinion regardless of specialty. Apart from that, there are separate meetings for radiologists and technicians who perform MRI-guided biopsies. Such a close cooperation between team members significantly improves confidence of their diagnostic and therapeutic decisions. It also has a positive impact on patients' quality of life.

Another advantage of such a close cooperation is a possibility of implementation of multiparametric MRI of the prostate gland as a screening method, along with PSA evaluation. A new short protocol might possibly serve as a reliable tool to select men who may benefit from early detection and prostate biopsy. Such a protocol has a reduced duration of imaging (approximately 15 minutes), and it does not involve routine contrast administration. Doubtlessly, it would enable more accurate diagnosis in a much shorter time without the need of repetitive TRUS-biopsies.

A growing interest in multiparametric imaging of the prostate gland is justified, since there is no better tool for imaging of prostate cancer [3,4]. However, it must be kept in mind that new solutions are being constantly implemented

in terms of diagnosis and treatment, and a close cooperation between specialties is essential to improve medical care.

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