CORRESPONDENCE

The Conservative and Interventional Treatment of Fibroids

by Dr. med. Alexander Stephan Boosz, Prof. Dr. med. Peter Reimer, Dr. med. Matthias Matzko, Prof. Dr. med. Thomas Römer und Prof. Dr. Andreas Müller in issue 51–52/2014

Missing Treatment Option

The authors discuss numerous treatments of fibroids (1), including MR-guided focused ultrasound surgery (MRgFUS/MRgHIFU). However, no reference is made to the option of ultrasound-guided high intensity focused ultrasound (USgHIFU), which was introduced in Germany in May 2014. Today, 140 USgHIFU systems are used in 17 countries around the world, including 9 systems at locations in Europe.

The primary advantage of USgHIFU systems over MRgFUS is the use of larger and more powerful transducers, enabling shorter treatment times along with greater efficacy. In addition, USgHIFU is less sensitive to movement and offers greater flexibility with regard to patient positioning. USgHIFU features an anatomic real-time background and direct ablation monitoring capabilities based on gray-scale changes.

Its efficacy and safety has been demonstrated worldwide in numerous studies. For example, using USgHIFU avascular fibroid areas of $80 \pm 12\%$ ($n=76$) (2) and $77 \pm 19\%$ ($n=282$) (2) were achieved while the rate of adverse events was very low; in addition, patients reported a significant amelioration of symptoms.

In a prospective study comparing USgHIFU ($n=89$) and laparoscopic myomectomy for symptomatic fibroids ($n=41$), significantly shorter hospital stays and faster recovery were observed in the USgHIFU treatment group (mean, 2.9 days vs. 6.2 days and 4.5 days vs. 10.9 days, respectively) (3).

The studies conducted so far have found no evidence of an increased risk of abortion after HIFU treatment. Approximately 100 cases of pregnancy after USgHIFU have been published to date. For example, one study observed 24 unexpected pregnancies in 435 patients treated with USgHIFU in the first year after the intervention; 8 of these patients had stated prior to becoming pregnant that they would like to have children (4). HIFU treatment was not associated with an increased complication rate and had no negative impact on sexual activity and menstrual cycle.

DOI: 10.3238/arztebl.2015.0328a

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In Reply:

Ultrasound-guided high-intensity focused ultrasound (USgHIFU) is another option for the treatment of uterine fibroids, as pointed out by Professor Strunk. As far as we know, this technology has been adopted by only one center in Germany to date.

The factors determining its suitability for the treatment of fibroids are almost identical with those for MR-guided focused ultrasound surgery (MRgFUS). The success rates and the unincreased abortion rate (1) can also be expected to be identical with those found for MRgFUS. However, visualization of the target tissue during sonication is significantly poorer with ultrasonography (only gray-scale changes) in comparison to MR imaging; as it is difficult to identify critical structures, such as the bowel or sacral nerves, with ultrasound scanners, ablation in close proximity to low energy density regions may be considered unsafe. Furthermore, in contrast to MRI, ultrasonography does not provide accurate temperature mapping; thus the information about the response of the target tissue to treatment is very limited when performing USgHIFU. Consequently, a subsequent MRI is required to document the result of the treatment “in retrospect”.

To date, no studies comparing the two techniques have been conducted. The availability of data from studies on USgHIFU is very limited compared with data on MRgFUS/MRgHIFU. The longest follow-up period after USgHIFU was 12 months (1). It remains to be seen whether this technology will be widely adopted and patients will gain unrestricted access to it.

DOI: 10.3238/arztebl.2015.0328b

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Conflict of interest statement

The authors of both contributions declare that no conflict of interest exists.