

The Accreditation and Training of High-Intensity Focused Ultrasound in the Asia-Pacific Region

High-intensity focused ultrasound (HIFU) ablation guided by ultrasound or a magnetic resonance imaging (MRI) is used for fibroids, adenomyosis, and various gynecological diseases. Ultrasound offers real-time monitoring imaging and the gray-scale change during HIFU treatment is relatively reliable in monitoring the response of the treatment by HIFU.^[1-3]

This article is for APAGE members and gynecologists who are interested to learn HIFU for the management of uterine fibroids and adenomyosis, which are more common than cervical cancers and uterine cancers. This article refers to the use of HIFU machine from Chongqing, China, which at the time of writing is one of the best for the treatments of fibroid and adenomyosis.

The HIFU machine from Chongqing is ultrasound guided and not MRI guided. Figure 1 illustrates the main differences between the two technologies.

The ultrasound-guided HIFU is invented by a gynecologist, Professor Wang Zhi Biao, for gynecologists. Therefore, every gynecologist should know that HIFU can be used for the treatment of uterine fibroids and adenomyosis. Ultrasound-guided HIFU has no radiation, so it does not need radiation protection or radiation shielding setup.

In 2019, a subcommittee of HIFU in APAGE, chaired by Prof Lee Chyi-Long (Taiwan), with Prof Felix Wong (Hong Kong)

and Prof Lee Keen Whye (Singapore) as vice-chairmen, was set up.

The training of HIFU is in three stages.

Stage I: Introductory training in a HIFU overseas center (OC). Trainee to attend one of the four pioneer HIFU OCs in Hong Kong, Singapore, and Taiwan. The training course shall include but not limit to the following:

1. Basic introduction of HIFU system, features, and functions
2. Nursing aspects of HIFU treatment
3. MRI interpretation in relation to uterus and pelvis
4. Clinical case studies and observation of live HIFU cases
5. Course Director's forum – Discussion on teaching videos, clinical papers, and overview of Stage I.

Stage II: Hands-on training with HIFU hospitals in China. Chongqing Haifu shall assign the hands-on training centers in China to the delegates.

Stage III: Attachment to local practicing HIFU centers. On-site training under HIFU specialist supervision. Trainee to complete not less than 50 HIFU treatments under the supervision of a HIFU specialist. Trainee will be assessed at the end of this stage of training by the Asia-Pacific Association for Gynecologic Endoscopy and Minimally Invasive Therapy (APAGE) on the suitability of receiving a certificate of HIFU practice.

The HIFU OC also must be accredited. This will be assessed based on treatment results and facilities for training. The criteria will be different from those in mainland China.

Possession of the following qualities will be useful to become a HIFU gynecologist,

- Spatial orientation
- Pelvic ultrasound experience
- Interpretation of MRI
- Patience
- Abide by safety guidelines.

CONCLUSION

We hope HIFU will be an alternative treatment for fibroid and adenomyosis before conventional surgery. As more and more gynecologists learn the use of HIFU, HIFU in my opinion will be a standard teaching in gynecology. To support the learning of the new surgery, training and accreditation is the most important issue in this process.

MRI vs ULTRASOUND GUIDANCE		
Features	MRg HIFU	USg HIFU
(1) Anatomic Resolution	✓	X
(2) Temperature Monitoring	✓	X
(3) Transducer Movement	X	✓
(4) Patient Positioning	X	✓
(5) MRI Chamber and Noise	✓	X
(6) Treatment Time	X (3-4 hours)	✓ (1-2 hours)
(7) Treatment Efficiency (Non-Perfused Volume) NPV	X (20% - 50%)	✓ (80% - 90%)
(8) Treatment Cost	✓✓	✓
(9) Operator	Interventional Radiologist	Gynaecologist or Trained Doctor

DR KW LEE

Figure 1: The chart illustrates the main differences between the two technologies. References (not more than 100 references). HIFU: High-intensity focused ultrasound

Financial support and sponsorship

Nil.

Conflicts of interest

Prof. Chyi-Long Lee, an editorial board member at *Gynecology and Minimally Invasive Therapy*, had no role in the peer review process of or decision to publish this article.

Lee Keen Whye^{1*}, Chyi-Long Lee²

¹SOG – KW Lee Clinic For Women, Singapore, ²Department of Obstetrics and Gynecology, Chang Gung Memorial Hospital, Linkou Medical Center and Chang Gung University, Taoyuan, Taiwan

Address for correspondence: Prof. Lee Keen Whye,
6 Napier Road #08-15/16 Gleneagles Medical Centre,
Singapore 258499, Singapore.
E-mail: drkwlee@gmail.com

REFERENCES

1. Zhang L, Wong FW. A high-intensity focused ultrasound surgery theater design in a private clinic. *Gynecol Minim Invasive Ther* 2020;9:1-5.
2. Wong WS, Lee MH, Wong PH. A journey from learning a noninvasive high-intensity focused ultrasound surgical treatment for gynecological diseases to providing high-intensity focused ultrasound services in Hong Kong. *Gynecol Minim Invasive Ther* 2021;10:71-4.
3. Chen J, Li Y, Wang Z, McCulloch P, Hu L, Chen W, *et al.* Evaluation of high-intensity focused ultrasound ablation for uterine fibroids: An IDEAL prospective exploration study. *BJOG* 2018;125:354-64.

Article History:

Submitted: 18-Jan-2022

Revised: 24-Jan-2022

Accepted: 14-Apr-2022

Published: 04-May-2022

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Access this article online

Quick Response Code:



Website:

www.e-gmit.com

DOI:

10.4103/gmit.gmit_24_22

How to cite this article: Whye LK, Lee CL. The accreditation and training of high-intensity focused ultrasound in the Asia-Pacific Region. *Gynecol Minim Invasive Ther* 2022;11:81-2.