Received: 22 August 2022 | Accepted: 26 August 2022

DOI: 10.1002/jcu.23331

COMMENTARY

WILEY

Transvaginal ultrasound versus magnetic resonance imaging in local staging of endometrial cancer

Juan Luis Alcazar

Department of Obstetrics and Gynecology, Clinica Universidad de Navarra, Pamplona, Spain

Correspondence
Juan Luis Alcazar, Department of Obstetrics and Gynecology, Clinica Universidad de Navarra, Avenida Pio XII 36 31008 Pamplona, Spain.
Email: jlalcazar@unav.es

Demer et al reported on an interesting study comparing the accuracy of transvaginal ultrasound (TVS) and magnetic resonance imaging (MRI) for local staging in women with endometrial cancer.[1] This study concluded that both techniques have a similar diagnostic accuracy for detecting deep myometrial infiltration and cervical invasion.

The main strength of this study is its prospective design with gynecologist and radiologist blinded each other to their respective assessment. The results of this study are relevant for they confirm data from two previous meta-analyses analyzing studies comparing TVS and MRI for detecting myometrial infiltration[2] and cervical invasion[3] in patients with endometrial cancer. These findings are clinically important since, as the authors state in their manuscript, TVS is cheaper and worldwide available than MRI. This fact is very important when considering the preoperative assessment of women with endometrial cancer in low- and mid-income countries, where financial and facility resources are scanty.

Interestingly, this study observed that TVS and MRI have similar diagnostic performance for identifying those women with no myometrial infiltration. This is very relevant from the clinical point of view since no myometrial infiltration is a crucial issue for selecting women for fertility sparing treatment.[4]

Additionally, the authors assessed the correlation of tumor volume, as measured by 2D TVS, 3D, TVS and MRI, with some poor prognostic histological factors such as tumor histological grade, lympho-vascular invasion and myometrial infiltration. They found out that tumor volume correlated with these factors. These findings agree with some previous reports,[5] highlighting the potential clinical value of this parameter. Furthermore, this study showed that tumor volume estimation performed by 2D TVD, 3D TVS and MRI had a good correlation among all three methods, reinforcing the idea that 2D TVS is enough for this estimation.

However, this study has some limitations. Sample size is small and the study might be underpowered to identify actual statistical differences. Second, as many studies reported in the literature addressing the same research question, this study included high-risk histology patients, in whom lymphadectomy should be performed regardless myometrial or cervical infiltration. This fact might bias the results and could overestimate the actual diagnostic accuracy of both TVS and MRI in low-risk cases, where preoperative assessment of myometrial and cervical invasion makes sense from the point of view of the gynecologic oncologist. Some recent studies focusing of low risk histology cases have shown that TVS and MRI have similar diagnostic performance for identifying myometrial infiltration in such cases.[6–8]

The results of this study should prompt new research. In modern Gynecologic Oncology, sentinel lymph node biopsy (SLNB) in endometrial cancer has become a standard of care in many institutions.[9–11] It would be interesting to assess whether TVS and MRI could be techniques that accurately correlated with SLNB status. If so, these imaging techniques would be a good alternative for those institutions where SNB is not available. Furthermore, molecular classification of endometrial cancer has become a reality in clinical practice.[12,13] Admitting that contrast-enhanced MRI is considered a molecular imaging technique,[14] it would be interesting to evaluate whether MRI findings could correlate with the molecular features of endometrial cancer.[15]

ORCID

Juan Luis Alcazar https://orcid.org/0000-0002-9700-0853

REFERENCES

1. Demer M, Pernioloa G, Manganaro L, et al. Correlation between preoperative imaging biomarkers and histological prognostic factors

in endometrial cancer: a prospective study. *J Clin Ultrasound*. 2022; 50:1375-1385.
2. Alcázar JL, Gastón B, Navarro B, Salas R, Aranda J, Guerriero S. Transvaginal ultrasound versus magnetic resonance imaging for preoperative assessment of myometrial infiltration in patients with endometrial cancer: a systematic review and meta-analysis. *J Gynecol Oncol*. 2017;28(6):e86.
3. Alcazar JL, Carazo P, Pegenaute L, et al. Preoperative assessment of cervical involvement in endometrial cancer by transvaginal ultrasound and magnetic resonance imaging: a systematic review and meta-analysis. *Ultraschall Med*. 2021. doi:10.1055/a-1408-2292
4. Stein EB, Hansen JM, Maturen KE. Fertility-sparing approaches in gynecologic oncology: role of imaging in treatment planning. *Radiol Clin N Am*. 2020;58(2):401-412.
5. Galván R, Mercé L, Jurado M, Mínguez JA, López-García G, Alcázar JL. Three-dimensional power Doppler angiography in endometrial cancer: correlation with tumor characteristics. *Ultrasound Obstet Gynecol*. 2010;35(6):723-729.
6. Dueholm M, Hjorth IM, Dahl K, Marinovskij E, Ørtoft G. Preoperative prediction of high-risk endometrial cancer by expert and non-expert transvaginal ultrasonography, magnetic resonance imaging, and endometrial histology. *Eur J Obstet Gynecol Reprod Biol*. 2021;263:181-191.
7. Gastón B, Muruzábal JC, Lapeña S, et al. Transvaginal ultrasound versus magnetic resonance imaging for assessing myometrial infiltration in Endometrioid low grade endometrial cancer: a prospective study. *J Ultrasound Med*. 2022;41(2):335-342.
8. Spagnol G, Noventa M, Bonaldo G, et al. 3D transvaginal ultrasound vs magnetic resonance imaging for preoperative staging of myometrial and cervical invasion in patients with endometrial cancer: systematic review and meta- analysis. *Ultrasound Obstet Gynecol*. 2022. doi: 10-1002/uog.24967
9. Eriksson AGZ, Davidson B, Bjerre Trent P, et al. Update on sentinel lymph node biopsy in surgical staging of endometrial carcinoma. *J Clin Med*. 2021;10(14):3094.
10. Zhai L, Zhang X, Cui M, Wang J. Sentinel lymph node mapping in endometrial cancer: a comprehensive review. *Front Oncol*. 2021; 29(11):701758.
11. Matsuo K, Klar M, Nusbaum DJ, et al. Utilization and outcomes of sentinel lymph node biopsy for early endometrial cancer. *Obstet Gynecol*. 2022;139(5):809-820.
12. Concin N, Matias-Guiu X, Vergote I, et al. ESGO/ESTRO/ESP guidelines for the management of patients with endometrial carcinoma. *Int J Gynecol Cancer*. 2021;31(1):12-39.
13. Imboden S, Nastic D, Ghaderi M, et al. Implementation of the 2021 molecular ESGO/ESTRO/ESP risk groups in endometrial cancer. *Gynecol Oncol*. 2021;162(2):394-400.
14. Yoo B, Pagel MD. An overview of responsive MRI contrast agents for molecular imaging. *Front Biosci*. 2008;1(13):1733-1752.
15. Jacob H, Dybvik JA, Ytre-Hauge S, et al. An MRI-based radiomic prognostic index predicts poor outcome and specific genetic alterations in endometrial cancer. *J Clin Med*. 2021;10(3):538.

How to cite this article: Alcazar JL. Transvaginal ultrasound versus magnetic resonance imaging in local staging of endometrial cancer. *J Clin Ultrasound*. 2022;50(9):1379-1380. doi:10.1002/jcu.23331