Ultrasound-Guided Transcervical Radiofrequency Ablation of Uterine Fibroids Clinical Coverage Criteria

Overview

Uterine fibroids (also called uterine myomas, fibromyomas or leiomyomas) are the most common benign tumors in women and are the leading reason for hysterectomy. Fibroids may be single or multiple and can vary in size and location. A standardized classification system was developed by the International Federation of Gynecology and Obstetrics (FIGO). Most uterine fibroids are asymptomatic, diagnosed incidentally on clinical examination or imaging and will not require treatment. Prolonged or heavy menstrual bleeding, with or without anemia and the sequelae of uterine enlargement are the most common presenting symptoms (ACOG, 2021).

Sonata Transcervical Fibroid Ablation System (Gynesonics, Inc., Redwood City, CA) is intended for diagnostic intrauterine imaging and transcervical treatment of symptomatic uterine fibroids, including those associated with heavy menstrual bleeding. The published evidence is comprised of 3 prospective, multicenter, single-arm cohort studies (FAST-EU trial, SONATA trial and OPEN trial) and one retrospective data collection study (VITALITY). Two studies (SONATA and OPEN) evaluated the Sonata System, and two studies (FAST-EU and VITALITY) evaluated its predecessor device (VizAblate System). In total, 234 women were enrolled in the 3 prospective studies. VITALITY enrolled 23 women who were previously treated in FAST-EU.

Lukes et al. (2020), Miller et al. (2019) and Chudnoff et al. (2019), reported on the outcomes of the SONATA trial (NCT02228174), a prospective, multicenter, single-arm cohort study (intervention = Sonata System, no comparator) that evaluated the safety and effectiveness of the Sonata System in the treatment of symptomatic uterine fibroids. Premenopausal women (n = 147) between the ages of 25 and 50 years with symptomatic uterine fibroids between 1-5 cm in diameter were enrolled. The study was conducted at 22 sites (21 in the United States, 1 in Mexico). Key exclusion criteria included desire for future pregnancy. Following the procedure, patients returned at 10 days, 30 days, 3 months, 6 months, and annually thereafter through the final follow-up visit at 3 years. The 24- and 36-month follow-up timepoints were included to gather longer-term data during the post-market phase and were not included to support the application for FDA clearance. Lukes et al. (2020) reported on the 3-year outcomes, Miller et al. (2019) on the 2-year outcomes and Chudnoff et al. (2019) on the 12-month outcomes. The study met its co-primary endpoints at 12 months (n=143, full analysis set), with 64.8% of women experiencing 50% or greater reduction in menstrual bleeding and 99.3% of women who did not have surgical intervention for heavy menstrual bleeding. The mean pictorial blood loss assessment chart score decreased by 38.9%, 48.4%, and 51.1% at 3, 6, and 12 months after the procedure, respectively ($p<0.001$). At 12 months, 95.1% of women had experienced a reduction in menstrual bleeding. The mean maximal reduction in fibroid volume per patient was 62.4% ($p<0.001$). Two serious procedural-related AEs were reported in 2 women (1.4%). There were 85% of women enrolled who returned for follow up at 2 years. Over 2 years, surgical reintervention for heavy menstrual bleeding was done in 5.5% of women. There was 1 pregnancy with a normal peripartum outcome. There were 15 women lost to follow up during the trial, with 90% of women accounted for at 3 years (132 people out of 147). Compared with baseline, mean symptom severity scores decreased from 55 (plus or minus 19) to 22 (plus or minus 21), health-related quality of life increased from 40 (plus or minus 21) to 83 (plus or minus 23). EQ-5D increased from 0.72 (plus

or minus 0.21) to 0.88 (plus or minus 0.16; all statistically significant with p<0.001). The 3-year rates of surgical reintervention for heavy menstrual bleeding calculated by the binomial and Kaplan–Meier methods were 9.2% and 8.2%, respectively. Surgical reinterventions included 10 hysterectomies and 1 endometrial ablation. All work productivity and activity level parameters improved significantly during the 3-year follow up. At 3 years, 94% of women were satisfied with treatment (71% very satisfied, 14% moderately satisfied, 9% somewhat satisfied).

Brölmann et al. (2016) reported on the FAST-EU trial (NCT01226290), a prospective, multicentre, single-arm cohort study (intervention = VizAblate System, no comparator) of 50 women (aged 28 or older) with uterine fibroids and heavy menstrual bleeding. This study was conducted at 7 sites (1 in Mexico, 4 in the Netherlands and 2 in the UK). Total fibroid volumes were reduced from baseline by an average of 55% (49 women; 89 fibroids) and 67% (28 women; 43 fibroids), respectively (p<0.001 for all compared with baseline). At 12 months, mean menstrual pictogram scores and symptom severity scores decreased by 54% (n=48; p<0.001) and 55% (n=49; p<0.001), respectively. This was a single-arm study, so direct comparisons with alternative treatment options cannot be made. Only 58% of eligible patients (28 people out of 48) had MRI at 12 months. Follow-up time was limited to 1 year, so long-term effects are unclear. Women who wanted to have a baby in the future or had fibroids larger than 5 cm were not included. The preservation of uterine wall integrity 12 months after treatment with VizAblate was also assessed for the 29 women using baseline and 12-month MRI image data. This secondary analysis (the INTEGRITY study, Bongers et al. 2019) showed that there were no areas on the MRI that indicated loss of myometrial integrity compared with baseline.

Bongers et al. (2019) conducted a prospective, multicentre, single-arm cohort study (the OPEN trial) involving 37 women to document the incidence of uterine adhesions after transcervical fibroid ablation of symptomatic uterine fibroids with the Sonata system. There were 50 fibroids with a mean diameter of 3.4 (plus or minus 1.8 cm; ranging from 1 cm to 8 cm) ablated. Of the 37 people enrolled, 35 completed the study follow up. Thirty-four out of 35 people who had paired baseline and second-look hysteroscopies that could be evaluated by the independent readers. At 6 weeks, none of these hysterectomy videos revealed any formation of intrauterine adhesions after treatment with Sonata. This included 6 people with apposing fibroids, that usually have a substantial risk of forming adhesions after operative hysteroscopic treatment.

Shifrin et al. (2021) conducted a subgroup analysis of 197 people (534 treated fibroids) from 2 prospective clinical trials (FAST-EU and SONATA) who had submucous, or large fibroids treated with the Sonata (or VizAblate) system. In the study, 86% of people with submucous fibroids only and 81% of people with large fibroids (over 5 cm in diameter) experienced bleeding reduction within 3 months after treatment with the Sonata system. During the 12 months after the procedure, overall symptom severity and health-related quality of life showed sustained, significant improvements. MRI imaging of fibroids in the FAST-EU trial showed an average volume reduction of 68%. Among people with submucous fibroids only, the rate of surgical reintervention during 12 months of follow-up was 3.7% in the FAST-EU trial and 0% in the SONATA trial.

Garza-Leal (2019) conducted a retrospective, single-arm, long-term (> 5 years) data-collection cohort study (VITALITY) involving 23 women with heavy menstrual bleeding secondary to fibroids. The study enrolled women who had previously been enrolled and treated in the 12-month FAST-EU trial at a site in Mexico. The study generated long-term follow-up information from 17 women (73.9%), with a mean follow up of 64.4 months (range 57 to 73 months). From baseline, mean Symptom Severity Score (SSS) decreased significantly from 64.9 ± 16.9 to 27.6 ± 36.1, and mean HRQoL improved significantly from 27.2 ± 22.4 to 76.0 ± 32.6 (p = 0.002, and p = 0.0001, respectively). There were no surgical reinterventions through the first 3.5 years post-treatment. There was an 11.8% incidence of surgical reinterventions over 5.4 years of average follow-up, with 2 hysterectomies occurring after 3.5- and 4-years post-ablation, respectively (event rate: 2.2% per year; 95% confidence interval; 0.3%, 7.9%). Freedom from surgical reintervention at 1, 2, and 3 years was 100%, and, at 4 and 5 years, was 88.2% ± 7.8%. There

was a single pregnancy occurring within the first year of treatment leading to a normal-term delivery by elective repeat cesarean section.

Overall, the evidence suggests that the Sonata System is an effective option for the treatment of symptomatic fibroids, including those associated with heavy menstrual bleeding. Data from the FAST-EU trial and the SONATA trial reported that using the Sonata System resulted in statistically significant reductions in total and perfused uterine fibroid volume, menstrual bleeding and symptom severity, and improved health-related quality of life. In the SONATA trial, there was a low rate of surgical reintervention during the first 12 months after treatment and no device-related adverse events were recorded (Chudnoff et al. 2019). The evidence base suggests that on average people return to normal daily activities between 2 and 4 days after the procedure and are generally satisfied with treatment. In the SONATA trial (Lukes et al. 2020) 94% of people were very, moderately or somewhat satisfied with treatment at 3 years. Data from the OPEN clinical trial suggests that using the technology has little or no risk of causing intrauterine adhesions (Bongers et al. 2019). Longer-term follow-up data from a small cohort of FAST-EU trial patients (Garza-Leal 2019) suggests that some of the clinical benefits of the technology (reduced symptoms and improved quality of life) can last more than 5 years after treatment.

All available evidence came from single-arm studies only, so direct comparisons with alternative treatments for fibroids cannot be made. Long-term data is available from 2 studies: one retrospective, single-arm, long-term (> 5 years) data collection study from a small cohort of patients (n=17) (Garza-Leal, 2019), and 3-year follow-up data from 132 of 147 women who were enrolled in the SONATA trial. Larger, long-term head-to-head studies comparing the technology with standard care (that is, myomectomy, hysterectomy, or uterine artery embolization) would be helpful.

In most of the studies, the treatable fibroids were limited to those that were between 1 cm and 5 cm in diameter, because these would normally be treated with 1 ablation only. In the SONATA study, 14.5% of fibroids (less than 5 cm in diameter) were treated with 2 or more ablations (Chudnoff et al. 2019). Data on the treatment of larger fibroids (over 5 cm in diameter) with Sonata is available (Shifrin et al. 2021). This study reported that Sonata is an effective single-stage treatment option for nonpedunculated submucous fibroids, and larger or deeper uterine fibroids (including fibroid clusters), for which hysteroscopic treatment is not suitable. In a retrospective analysis, Piriyev et al., 2022 reported on the effectiveness of transcervical radiofrequency ablation of fibroids that are 5 cm or larger using the Sonata System. The smallest fibroid was 4 cm, and the largest fibroid was 12 cm. A single ablation was performed in 18 cases, two ablation steps in 16 cases, three ablation steps in 13 cases, and more than three ablation steps in three cases.

Studies excluded women who may want to have children in the future, The 12-month MRI data from 34 women in the FAST-EU trial (Bongers et al. 2019) showed that treatment with Sonata may preserve uterine wall integrity. Successful pregnancies (36 pregnancies representing 20 deliveries among 28 women) after treatment with the Sonata System have been reported (Christoffel et al., 2022). Further evidence is needed on how Sonata may affect fertility for women who want to have children in the future.

SAGE is an ongoing post-market registry (NCT03118037) involving up to 50 sites and up to 500 women who select transcervical fibroid ablation with the Sonata system for treatment of symptomatic uterine fibroids. Patients will be followed for 5 years. Main outcomes include SSS and HRQoL, perceived treatment benefit, treatment satisfaction, work and activity patterns, overall patient treatment outcome, adverse events, pregnancy incidence and outcomes, and surgical reinterventions for heavy menstrual bleeding. The estimated study completed date for SAGE is December 2025. The results of SAGE will strengthen the existing evidence base for Sonata (Christoffel et al., 2021).

Policy

This Policy applies to the following Fallon Health products:
☒ Commercial
☒ Medicare Advantage
☒ MassHealth ACO
☒ NaviCare
☒ PACE

Fallon Health follows guidance from the Centers for Medicare and Medicaid Services (CMS) for organization (coverage) determinations for Medicare Advantage plan members. National Coverage Determinations (NCDs), Local Coverage Determinations (LCDs), Local Coverage Articles (LCAs) and guidance in the Medicare manuals are the basis for coverage determinations. When there is no NCD, LCD, LCA or manual guidance, Fallon Health Clinical Coverage Criteria are used for coverage determinations.

Medicare does not have an NCD for ultrasound-guided transcervical radiofrequency ablation of uterine fibroids. National Government Services, Inc. is the Part A/B Medicare Administrative Contractor (MAC) with jurisdiction in our service area. National Government Services, Inc. does not have an LCD or LCA for ultrasound-guided transcervical radiofrequency ablation of uterine fibroids (MCD search 10/24/2022).

For plan members enrolled in NaviCare, Fallon Health follows Medicare guidance for coverage determinations. When there is no Medicare guidance or if the plan member does not meet medical necessity criteria in Medicare guidance, Fallon Health Clinical Coverage Criteria will be used for medical necessity determinations, except as otherwise provided herein.* Fallon Health's Clinical Coverage Criteria are developed in accordance with the definition of Medical Necessity in 130 CMR 450.204 and are therefore no more restrictive than MassHealth medical necessity guidelines.

* In June 2022, MassHealth issued Transmittal Letter PHY-164. Transmittal PHY-164 adds coverage for Sonata Transcervical Fibroid Ablation (CPT code 0404T), effective June 1, 2022, for NaviCare members with uterine fibroids who meet MassHealth coverage criteria.

Each PACE plan member is assigned to an Interdisciplinary Team. PACE provides participants with all the care and services covered by Medicare and Medicaid, as approved by the interdisciplinary team, as well as additional medically necessary care and services not covered by Medicare and Medicaid. With the exception of emergency care and out-of-area urgently needed care, all care and services provided to PACE plan members must be approved by the interdisciplinary team.

For MassHealth ACO members, Fallon Health Clinical Coverage Criteria are used for medical necessity determinations, except as otherwise provided herein.* Fallon Health's Clinical Coverage Criteria are developed in accordance with the definition of Medical Necessity in 130 CMR 450.204 and are therefore no more restrictive than MassHealth medical necessity guidelines.

* In June 2022, MassHealth issued Transmittal Letter PHY-164. Transmittal PHY-164 adds coverage for Sonata Transcervical Fibroid Ablation (CPT code 0404T), effective June 1, 2022, for MassHealth members with uterine fibroids who meet MassHealth coverage criteria.

Fallon Health Clinical Coverage Criteria

Part I. Commercial, Fallon Medicare Plus

Ultrasound-guided transcervical radiofrequency ablation of uterine fibroids using the Sonata Transcervical Fibroid Ablation System (Gynesonics, Inc., Redwood City, CA) is considered experimental/investigational.

Part II. MassHealth ACO, NaviCare

Ultrasound-guided transcervical radiofrequency ablation of symptomatic uterine fibroids using the Sonata Transcervical Fibroid Ablation System (Gynesonics, Inc., Redwood City, CA) is covered for MassHealth ACO and NaviCare members effective June 1, 2022, in accordance with MassHealth Transmittal Letter PHY-164.

Prior authorization is required for ultrasound-guided transcervical radiofrequency ablation of uterine fibroids using the Sonata Transcervical Fibroid Ablation System (CPT 0404T) effective for dates of service on or after March 1, 2023.

MassHealth Coverage Criteria

Requests for Sonata Transcervical Fibroid Ablation (0404T) must be accompanied by clinical documentation that supports medical necessary, including all of the following:

1.) the primary diagnosis name(s) and the ICD-CM code(s) for the condition,
2.) the secondary diagnosis name(s) and ICD-CM code(s) pertinent to any comorbid conditions, if present,
3.) the most recent medical evaluation, including a summary of the medical history and the most recent physical exam with emphasis on findings relevant to uterine fibroids including an abdominal and pelvic exam,
4.) results of radiology studies (ultrasound, MRI, etc.) and other tests relevant to the condition for which Sonata is being requested,
5.) a summary of the nonoperative, conservative treatment(s) that have been tried and have been unsuccessful in managing the patient's condition,
6.) any risk factors and/or comorbid conditions' and
7.) other pertinent information that the Plan may request.

Coding

The following codes are included below for informational purposes only; inclusion of a code does not constitute or imply coverage or reimbursement.

Code	Description
0404T	Transcervical uterine fibroid(s) ablation with ultrasound guidance, radiofrequency

References

1. American College of Obstetricians and Gynecologists' Committee on Practice Bulletins–Gynecology. Management of Symptomatic Uterine Leiomyomas: ACOG Practice Bulletin, Number 228. *Obstet Gynecol*. 2021 Jun 1;137(6):e100-e115.
2. Vilos GA, Allaire C, Laberge PY, Leyland N; SPECIAL CONTRIBUTORS. The management of uterine leiomyomas. *J Obstet Gynaecol Can*. 2015 Feb;37(2):157-178.
3. National Institute for Health and Care Excellence (NICE). Sonata system for diagnostic imaging and treatment of symptomatic uterine fibroids Medtech innovation briefing Published: 30 March 2021. www.nice.org.uk/guidance/mib255.
4. Food and Drug Administration (FDA). Center for Devices and Radiological Health (CDRH). K211535. Sonata Transcervical Fibroid Ablation System 2.2 [substantial equivalence letter]. June 17, 2021. Food and Drug Administration [website]. Available at: https://www.accessdata.fda.gov/cdrh_docs/pdf21/K211535.pdf.
5. Lukes A, Green MA. Three-Year Results of the SONATA Pivotal Trial of Transcervical Fibroid Ablation for Symptomatic Uterine Myomata. *J Gynecol Surg*. 2020 Oct 1;36(5):228-233.
6. Chudnoff S, Guido R, Roy K, Levine D, Mihalov L, Garza Leal JG. Ultrasound-guided transcervical ablation of uterine leiomyomata. *Obstet Gynecol*. 2019;133:13-22.

7. Miller CE, Osman K. Transcervical radiofrequency ablation of symptomatic uterine fibroids: 2-year results of the SONATA pivotal trial. *J Gynecol Surg*. 2019;35(6):345-349.
8. Brölmann H, Bongers M, Garza-Leal JG, et al. The FAST-EU trial: 12-month clinical outcomes of women after intrauterine sonography-guided transcervical radiofrequency ablation of uterine fibroids. *Gynecol Surg*. 2016;13:27-35.
9. Bradley LD, Pasic RP, Miller LE. Clinical performance of radiofrequency ablation for treatment of uterine fibroids: systematic review and meta-analysis of prospective studies. *J Laparoendosc Adv Surg Tech A*. 2019 Dec;29:1507-1517.
10. Hudgens J, Johns DA, Lukes AS, Forstein DA, Delvadia D. 12-month outcomes of the US patient cohort in the SONATA pivotal IDE trial of transcervical ablation of uterine fibroids. *Int J Womens Health*. 2019 Jul 5;11:387-394.
11. Christoffel L, Bends R, Toub D, Schiermeier S, Pschadka G, Engelhardt M, Quinn S, Hartmann M, Habiba M, Felberbaum R, Brössner A, Schippert C, Römer T. Pregnancy Outcomes After Transcervical Radiofrequency Ablation of Uterine Fibroids with the Sonata System. *J Gynecol Surg*. 2022 Jun 1;38(3):207-213.
12. Shifrin G, Engelhardt M, Gee P, Pschadka G. Transcervical fibroid ablation with the Sonata™ system for treatment of submucous and large uterine fibroids. *Int J Gynaecol Obstet*. 2021 Oct;155(1):79-85.
13. Piriyev E, Schiermeier S, Bends R, Römer T. Transcervical radiofrequency ablation of fibroids that are 5 cm or larger in women with abnormal uterine bleeding. *J Gynecol Obstet Hum Reprod*. 2022 Feb;51(2):102303.
14. Garza-Leal JG. Long-Term Clinical Outcomes of Transcervical Radiofrequency Ablation of Uterine Fibroids: The VITALITY Study. *J Gynecol Surg*. 2019 Feb 1;35(1):19-23.
15. Roy K, Robinson JK. Durable Improvement in Generic and Fibroid-Specific Quality of Life in Women Treated with Transcervical Fibroid Ablation with the Sonata System After Three Years. *J Gynecol Surg*. 2022 Apr 1;38(2):143-147.
16. Bongers M, Quinn SD, Mueller MD, et al. Evaluation of Uterine Patency following Sonography-Guided Transcervical Ablation of Fibroids. *Eur J Obstet Gynecol Reprod Biol*. 2019;242:122-125.
17. Christoffel L, Römer T, Schiermeier S. Transcervical Radiofrequency Ablation of Uterine Fibroids Global Registry (SAGE): Study Protocol and Preliminary Results. *Med Devices (Auckl)*. 2021 Mar 3;14:77-84.
18. Erratum: Transcervical Radiofrequency Ablation of Uterine Fibroids Global Registry (SAGE): Study Protocol and Preliminary Results [Corrigendum]. *Med Devices (Auckl).* 2021 Mar 15;14:85.

Policy history

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Not all services mentioned in this policy are covered for all products or employer groups. Coverage is based upon the terms of a member's particular benefit plan which may contain its own specific provisions for coverage and exclusions regardless of medical necessity. Please consult the product's Evidence of Coverage for exclusions or other benefit limitations applicable to this service or supply. If there is any discrepancy between this policy and a member's benefit plan, the provisions of the benefit plan will govern. However, applicable state mandates take precedence with respect to fully insured plans and self-funded non-ERISA (e.g., government, school boards, church) plans. Unless otherwise specifically excluded, federal mandates will apply to all plans.