

Clinical Data Fact Sheet

Studies and Analyses

900+ patients studied and actively being studied under various protocols, 47+ peer reviewed publications to date that include safety and efficacy data on 475 unique patients

Name	Type of Study	Patients	Pub. Primary Author
Prospective Studies			
Investigational Device Exemption (IDE trial)	Non-comparative prospective study, cohort study	135	Chudnoff (12 months) Berman (36 months) Galen (observations) Levine (observations)
Randomized controlled trial (RCT) comparing Laparoscopic Radiofrequency Ablation (Lap RFA) with. Myomectomy (LM)	Comparative prospective study RCT	50	Brucker (12 months) Kramer (24 months)
TRUST Safety study*	Post-market, prospective, multi center longitudinal	105	Publication pending; results listed in IFU
Feasibility study*	Peri-hysterectomy phase & laparoscopic phase	120	Robles, Garza
ULTRA registry*	Multi-center study sponsored UCSF	Enrolling 600	Led by Jacoby
Meta Analyses			
Lin: Lap RFA	Meta Analysis		Lin
Havryliuck: Comparative fibroid treatment options	Systematic Review		
Bradley: Laparoscopic and Transcervical RFA 2018*	Meta Analysis		Bradley
Sandberg: Reintervention and QOL after uterine sparing interventions fibroids*	Meta analysis		

*summary details on these studies are not included in this document

Disclaimers

Physicians: There are potential risks associated with the Acesa procedure. It may not be appropriate for all patients and all patients may not benefit. For information about the indications, contraindications, warnings, and precautions, visit: www.acessaprocedure.com. Rx Only.

Patients: The Acesa ProVu system is cleared by the FDA for the treatment of symptomatic uterine fibroids under laparoscopic ultrasound guidance. The Acesa procedure is generally safe but complications may occur and can be serious. Risks and complications associated with the Acesa procedure include, but are not limited to: skin burns from the dispersion of radiofrequency energy, mild intra-operative bleeding, transient urinary retention or urinary tract infection, adhesion formation, post-procedural discomfort (cramping, pelvic pain), and transient amenorrhea, infection, injury to adjacent structures, vaginal bleeding and temporary anemia, blood loss requiring transfusion or hysterectomy, pneumothorax, wound dehiscence, deep vein thrombosis and pulmonary embolus, treatment failure, and complications related to laparoscopy and/or general anaesthesia including death.

Insufficient data exists on which to evaluate the safety and effectiveness of Acesa procedure in women who plan future pregnancy. Therefore, the Acesa procedure is not recommended for women who are planning future pregnancy. There is limited data regarding pregnancy following the Acesa procedure, if you become pregnant following the Acesa procedure, you should contact your doctor immediately.

Please consult with your doctor to understand the risks and benefits of surgery and find out if Acesa may be right for you. Rx Only.

Investigational Device Exemption (IDE) Trial

Primary Authors on Publications: Chudnoff (12 months), Berman (36 months)

135 patients, 3 years, primarily measured decreased in Menstrual Blood Loss (MBL), safety (adverse event rate) and reintervention rate with secondary measures for quality of life

Objective

To estimate the safety and efficacy of laparoscopic radiofrequency ablation (Lap RFA) of uterine myomas in symptomatic women.

To analyze the clinical success of laparoscopic radiofrequency ablation (Lap RFA) at 3-year follow-up in terms of subject responses to validated questionnaires and surgical repeat intervention to treat myomas.

Patients Treated

N = 135 patients

Age: 32-52

African American: 53%

White: 43%

Asian and other: 4%

Mean baseline menstrual blood loss: 272 mL (ranging from 160 mL to 500 mL); equivalent to approximately mean 55 tampons

Fibroids Treated

Range: 0.7 cm-9.7 cm

Subserosal: 29%

Intramural: 53%

Transmural: 5%

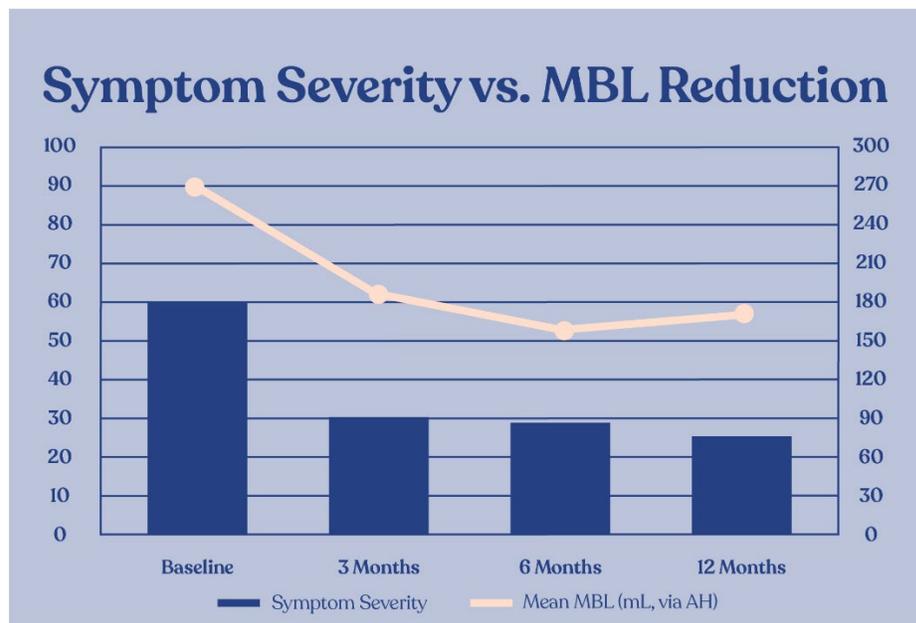
Submucosal: 25%

(myoma may be more than one type)

Results

3,6, 12 month Results	
Menstrual Blood Loss Decrease	Mean: 31%, 40%, 38% (3, 6, 12 mo)
<i>At 3, 6 & 12 months; measured by "gold standard" alkaline hematin method</i>	38% reduction: 272 mL → 166 mL (approx.: 55 → 33 tampons)
	Avg. Reduction: 103.6 mL (approx. reducing by 20 tampons)
Fibroid Volume Reduction (mean)	Mean: 39.8%, 45.1% reduction (at 3, 12 months)
<i>At 12 months measured by MRI imaging</i>	80cm ³ → 50 cm ³ → 44.9cm ³
	<i>Note on volumetric vs diameter reduction:</i>

	<p><i>Example - If fibroid was spherical at 5.3 cm diameter = ~80cm³</i></p> <p><i>After a 45% reduction = approx. 4.3 cm diameter = 44.9cm³</i></p> <p><i>Thus, 1 cm decrease in diameter yielded 45% decrease in volume</i></p>
Uterine Volume Reduction At 12 months	Mean reduction: 15.7%, 24.3% (3, 12 months)
Symptom Severity Improvement At 12 months	Baseline 61.1 → 26.6
Health related Quality of Life	Baseline: 37.3 → 79.5
Missed days of work	Median: 5 days

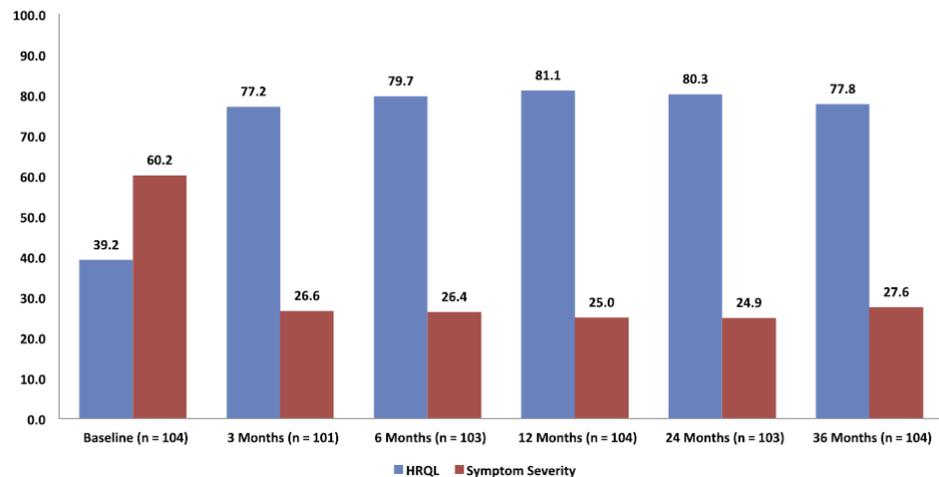


Imaging: Lap Ultrasound identified 2.0x more fibroid than Transvaginal Ultrasound and 1.5x more fibroids than MRI (Levine observational publication, 2013)

Intramural Fibroids in HMB: Of the 122 in whom menstrual blood loss was quantified at baseline and 12 months post procedure, more than half of the subject (n = 63) had intramural fibroids with no submucosal fibroids, after Lap RFA, these pts achieved decrease MBL 31.8%. First study to demonstrate role of intramural fibroids impacting HMB without the presence of submucosal fibroids. (Galen observational publication 2013)

36 month results

Reintervention Rate At 36 months	11%, n=14 reinterventions, 7 of the 14 reinterventions had adenomyosis present.
Health related Quality of Life & Symptom Severity	Symptom Improvement and Quality of Life: Sustained improvement in UFS-QOL symptom severity and health-related quality of life scores over 3 years most improvement by 3 months.



Conclusions

Lap RFA is well tolerated and results in rapid recovery, high patient satisfaction, improved quality of life and effective symptom relief.

Lap RFA resulted in sustained relief from myoma symptoms and continued improvement in health-related quality of life through 36 months after ablation. The low repeat intervention data through 36 months is a positive outcome for patient well-being.

Publications (Sources)

12 month results, published 2013:

SG Chudnoff, et al. Outpatient Procedure for the Treatment and Relief of Symptomatic Uterine Myomas. *Obstetrics and Gynecology*, 2013;121(5):1075–82.

36 month results, published 2014:

Jay M. Berman, MD, Richard S. Guido, MD, José Gerardo Garza Leal, MD, Rodolfo Robles Pemueller, MD, Fredrick S. Whaley, PhD, Scott G. Chudnoff, MD, MS, Three years' outcome from the Halt trial: a prospective analysis of radiofrequency volumetric thermal ablation of ,myomas, *The Journal of Minimally Invasive Gynecology* 2014;

DJ Levine, MD, JM Berman, MD, M. Harris, MD, SG Chudnoff, MD, MS, FS Whaley, PhD, SL Palmer, MD, Sensitivity of myoma imaging with laparoscopic ultrasound compared to magnetic resonance imaging and transvaginal ultrasound. *J Minim Invasive Gynecol* 2013; 20(6):770-774.

DI Galen, MD, KB Isaacson, MD, BB Lee, MD, Does menstrual bleeding decrease after ablation of intramural fibroids? A retrospective study. *J Minim Invasive Gynecol* 2013; 20(6):830-835.

Randomized controlled trial (RCT) comparing Laparoscopic Radiofrequency Ablation (Lap RFA) with. Myomectomy (LM)

Primary Authors on Publications: Brucker (12 month results), Kramer (24 month results)

50 patients (25 Lap RFA, 25 LM), 5 years*, to compare the mean hospital discharge times and perioperative outcomes.

*12 and 24 month data published

Study Objective To compare the mean hospital discharge times and perioperative outcomes for laparoscopic radiofrequency ablation (Lap RFA) of fibroids and laparoscopic myomectomy (LM).

Patients Treated N = 50 patients
Age: 32-48
Mean number fibroids/pt (measured intraop.): Lap RFA: 2.9; LM: 2.4
 25 randomly assigned to Lap RFA; 25 LM

Fibroids Treated

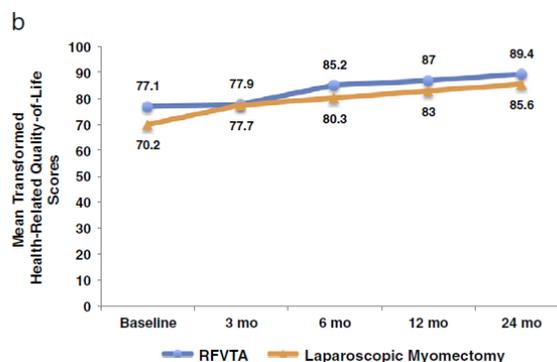
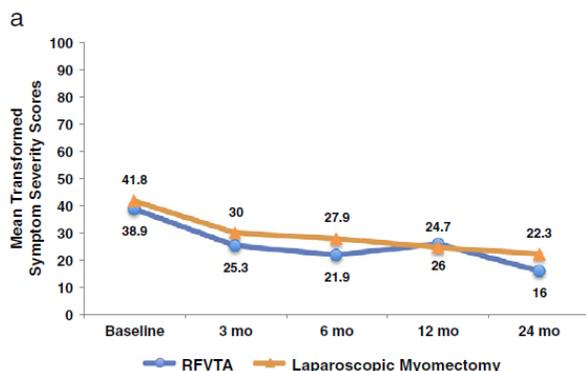
	Lap RFA	Lap. Myomectomy
Subserosal	51%	56%
Intramural	46%	43%
Transmural	0%	0%
Submucosal	0%	4%
IMAE	3%	
Pedunculated subserosal	0%	3%
Fibroids treated/pt (mean)	2.9 fibroids	2.4 fibroids
Fibroids treated/pt (range)	1-9 fibroids	1-6 fibroids
Fibroid diameter (mean)	6.3 cm	6.2 cm
Fibroid diameter (range)	2.6 – 18.8 cm	1.9 – 15.2 cm
Largest fibroid treated	8.7 cm	9.2 cm

Study Design Once a patient’s fibroids were mapped, classified, and recorded on the treatment case report form, an envelope was drawn that contained the patient’s treatment assignment. An independent third-party statistician performed a computer generation of the randomization assignments in blocks of 6 or 4; the patient and the surgeon were blinded to the treatment assignment.

Results

	Lap RFA	Lap. Myomectomy
Intraoperative Blood Loss (mean)	16 mL	51 mL
Intraoperative Blood Loss (range)	0 – 30 mL	10 – 300 mL

Hospitalization Time (mean)	10.0 hrs	29.9 hrs
Hospitalization Time (Range)	4.2 – 25.5 hrs	16.1-68.1 hrs
% Fibroids treated vs. imaged	98.6% fibroids treated	80.3% fibroids treated



Conclusion

Lap RFA resulted in the treatment of more fibroids, a significantly shorter hospital stay, and less intraoperative blood loss than laparoscopic myomectomy.

“In summary, 24-month data from the present interim analysis of a randomized controlled trial suggest equivalence in safety and patient reported outcomes of RFVTA and laparoscopic myomectomy.”

Publications (Sources)

12 month results

Sara Y. Brucker, Markus Hahn, Dorit Kraemer, Florin Andrei Taran, Keith B. Isaacson, Bernhard Krämer. Initial results from a randomized controlled study of laparoscopic radiofrequency volumetric thermal ablation of fibroids and laparoscopic myomectomy, International Journal of Gynecology and Obstetrics 2014

24 month results

Bernhard Krämer, Markus Hahn, Florin A.Taran, Dorit Kraemer, Keith B. Isaacson, Sara Y. Brucker, Interim analysis of a randomized controlled trial comparing laparoscopic radiofrequency volumetric thermal ablation of uterine fibroids with laparoscopic myomectomy, International Journal of Gynecology and Obstetrics, 133 (2016) 206-211.

Meta Analysis: Lin

Primary Authors on Publications: Lin

Referencing 8 studies, across 581 patients and 36 months on longitudinal data to study quality of life, adverse events and reintervention outcomes after radiofrequency ablation for symptomatic uterine fibroids:

Objective

Assess the short-term (3 and 6 months) and long-term (12, 24, and 36 months) symptom relief and quality of life improvement, procedure-related adverse event rate, reintervention rate, and days missed from work after laparoscopic radiofrequency ablation

Studies in Meta Analysis

581 patients, across 8 studies

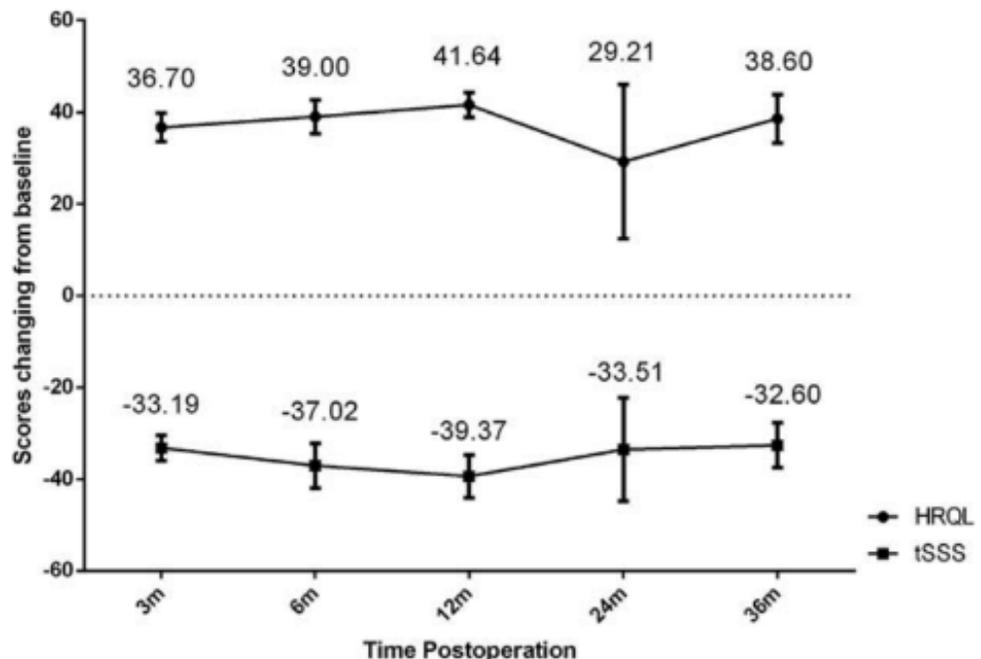
Primary author year published (# pts)

Kramer 2016 (26); Berman 2014 (135)*; Guido 2013 (124)*; Robles 2013 (36); Garza Leal 2011 (31); Ghezzi 2007 (25), Galen 2014 (69)*, Galen 2014 (135)*

*IDE pivotal study

Age (mean): 42 years

Results



“Our review indicates that the maximum improvements in uterine fibroid symptoms and quality of life occur at 12 months after laparoscopic radiofrequency ablation, with an average increase of 41.64 points in HRQL scores and an average reduction of 39.37 points in tSSS scores. These changes in HRQL and tSSS scores are considered clinically significant. In addition, the changes in HRQL and tSSS scores remained stable up to 36 months after therapy.”

“Most studies suggested that patients could gain a long-term relief of symptoms, particularly for patients with severe symptoms and poor quality of life.”

Reintervention Rate (mean) <i>weighted mean duration follow up: 24 months</i>	Mean: 4.39%
	Range: 1.6-8.45% (7 studies)
Uterine Volume Reduction (mean) <i>At 12 month follow up</i>	Mean: 31%; 69 cm ³
	Range: 12%-50%; 35-102cm ³ (2 studies)
Procedure-related adverse event rate (mean) <i>weighted mean duration follow up: 19 months</i>	Mean: 1.78%
	Range: 0.62%-3.53% (6 studies)
Return to Work	4.35 days
	Range: 2.55-6.15 days (5 studies)

Conclusion

“Laparoscopic radiofrequency ablation therapy is an efficacious way to treat ... symptomatic uterine fibroids, providing stable long-term symptom relief and quality of life improvement with a low risk of adverse events and reintervention and just a few days of missed work. After treatment, patients will gain stable long-term symptom relief and quality of live improvement.”

“Meanwhile, the overall risks of adverse events and reintervention are low, and patients miss only a few days of work”

Publication (Source)

Leteo Lin, MD, Haocheng Ma, MD, Jian Wang, MD, Haitao Guan, MD, Min Yang, MD, Xiaoqiang Tong, MD and Yinghua Zou, MD. Quality of life, adverse events and reintervention outcomes after radiofrequency ablation for symptomatic uterine fibroids: a meta-analysis. J Minim Invasive Gynecol 2019;26(3):409-416.

Meta Analysis: Havryliuck

Primary Authors on Publications: Havryliuck 2017

Referencing 45 studies to determine whether recommendations can be made regarding best practice for symptomatic uterine fibroid patients, based on review and analysis of the literature since 2006

Objective “Symptomatic uterine fibroids are a societal and healthcare burden with no clear consensus among medical professionals as to which procedural treatment is most appropriate for each symptomatic patient. Our purpose was to determine whether recommendations can be made regarding best practice based on review and analysis of the literature since 2006.”

Studies in Meta Analysis 53 studies included in qualitative synthesis; 45 included in quantitative synthesis (meta analysis)

Results

	Lap RFA	Myomectomy	UAE	Hysterectomy
Procedure Details & Early Follow Up				
Blood Loss	35.4 mL	175.5 mL	NA	269.3 mL
Length of Stay	0 days	2.0 days	2.4 days	2.2 days
Complications, major	1.7%	3.5%	2.7%	2.1%
Operating Time	117 mins	106 mins	51 mins	96 mins
Long Term Follow Up				
Duration of follow up	27.0 months	34.7 months	13.5 months	11.2 months
Number of patients	209 pts	689 pts	1423 pts	334 pts
Reintervention rate	5.2%	4.2%	14.8%	NA
Readmission rates	0.7%	2.7%	3.4%	7.4%
Symptom Severity (lower is better)	19.5	37	38	7.6
HQL (higher is better)	94.1	84.1	78.9	67.9

*MRgFUS was also analyzed, results can be found in the published article; Figures listed are means

Conclusion Lap RFA is associated with low complication rates, minimal EBL, and low reintervention rates. In addition, patients reported major improvement in their HRQL and symptom severity scores compared to reports of more traditional interventions, such as hysterectomy, myomectomy, and UAE. Women who had Lap-RFA did not require hospitalization.... Because of the precise placement of probe into a targeted myoma, which is confirmed by laparoscopic ultrasound before ablation, there is minimal disruption of normal myometrium and ovarian function.

Publication (Source) Yelena Havryliuk, MD, Robert Setton, MD, John Carlow, EdD, MPH, Barry D. Shaktman, MD, Management of symptomatic fibroids: review and meta-analysis of the literature (2006 -2016), Journal of the Society of Laparoendoscopic Surgeons, Vol. 21 (3) Jul-Sept 2017