# PROFCUND MEDICAL

Incision-free Surgery Real-Time MR Guided Ultrasound Therapies

CORPORATE PRESENTATION | MAY 2018

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### From open surgery to incision-free surgery



- Surgical planning with real time imaging
- Whole gland or disease targeted partial ablation of prostate









#### <u>Transurethral Ablation</u> Using Thermal Ultrasound with <u>Real-time MR</u> <u>Guided Controlled Dosimetry</u>

#### TULSA-PRO°

#### Precise ablation with millimeter accuracy

- Real-Time MR Imaging
- Real-Time process control of ablation using MR temperature map and robotically driven arm

#### Customized treatment to meet each patients particular need

- Urologist defines region of ablation
- Full gland or targeted therapy for localized cancer
- BPH

#### Safety by design

- Ablate from Inside-prostate; safer than outside-through rectum, able to treat prostates >140 cc
- · Actively protects urethra and rectum via cooling
- MR and Ultrasound heating are safe modalities

#### Two hour procedure time







### **TULSA Procedure Case Example (Axial Images)**

Apex

**Mid-Gland** 

Base

Treatment Planning

Maximum Temperature during Treatment







E5 \_\_\_\_\_



E6 \_\_\_\_\_



Time: 53:27



Post Treatment Contrast Enhanced MRI







TULSA Technology Offers Flexibility



- Treatment natural follow-on to MRI guided diagnosis and MRI guided biopsy to diagnose disease with precision
- Outpatient procedure patients discharged within 24 hours
- · Customized treatment plan to each prostate anatomy and pathology
- Real-time MRI guidance and control ensures accurate ablation to 1.3 mm precision
- Inside-Prostate approach allows for treatment of large prostates > 140 ml



## TULSA-PRO Addressing Unmet Need



### Enables Whole-Gland or Targeted Treatment

- Over 90% of prostate cancers present with multi-focal lesions
- 20-40% of patients have their disease confined to one side of the prostate



 Multi-focal nature of prostate cancer requires that clinicians have tools that can provide them precise, safe and effective partial to whole gland range of treatment



Targeted Ablation

Whole Gland Ablation

Perera M et al. An update on focal therapy for prostate cancer. Nature Reviews Urol 2016; 13:641-53.



### **TULSA – Technical & Canine Studies**



Chopra 2001 Phys Med Biol, Chopra 2005 Phys Med Biol, Boyes 2007 J Urology, Chopra 2008 Med Phys, Chopra 2009 Phys Med Biol, Burtnyk 2009 Int J Hyperthermia, Burtnyk 2010 Med Phys, Siddiqui 2010 Urology, Burtnyk 2010 Phys Med Biol, Chopra 2010 Int J Hyperthermia, N'Djin 2012 Int J Hyperthermia, N'Djin 2012 Med Phys, Ramsay 2013 JMRI, Burtnyk 2015 J Urology



### **TULSA – First-in-Man Treat & Resect Study for Feasibility**





## **TULSA – Treat & Resect for Targeted Ablation**



Ramsay, Chopra, Klotz 2017 J Urology

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### Phase I – 90% Ablation for Safety & Precision



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#### Phase I: Correlation of Thermal Ablation to Prostate Volume & PSA reduction





### Phase I Ablation Efficacy: PSA

- PSA reduction in agreement with treatment plan
- Decreased 90% to nadir and stable to 36 months





### **TULSA – TACT – Pivotal Study, Whole Gland Ablation to Capsule**





## TACT Pivotal Trial: Full Prostate Volume Ablation (99%)

#### To support FDA application, enrollment completion Feb 2018

**Study Population:** Intermediate and low risk patients, 45 – 80 years old, n=115, 13 clinical sites

#### **Primary Endpoints**

- · Safety Frequency and severity of adverse events
- Efficacy PSA reduction  $\ge 75\%$ 
  - Proportion of patients achieving PSA nadir ≤ 25% of the pre-treatment baseline value
  - Performance goal for the success proportion is 50% of patients

#### **Secondary Endpoints**

- Prostate volume reduction on MRI at 12 months, PSA nadir % patients with PSA ≤ 0.5 ng/ml, PSA stability % patients with PSA ≤ 0.5 ng/ml at 12 months
- Prostate TRUS biopsy % patients with negative biopsy at 12 months
- Erectile function Change in % patients with IIEF-5 ≥ 17, Erection firmness sufficient for penetration Change in % patients with IIEF Q2 ≥ 2
- Urinary incontinence Change in % patients using  $\geq$  1 pad / day
- Quality of life IPSS, IIEF-15 & EPIC-50
- Targeting accuracy Accuracy and precision of conformal thermal ablation of target prostate volume



### **TACT** Pivotal Trial – Study Population

Characteristics	Planned	Actual
Enrollment	110	115
Age (years)	45 – 80 y	64 (IQR 59 – 69) y
PSA (ng/ml)	≤ 15	6.4 (IQR 5.0 - 8.3) ng/ml
Gleason Score 6 (3 + 3) 7 (3 + 4)	≤ 3 + 4	45 (39%) 3+3 70 (61%) 3+4
D'Amico Risk Low risk Intermediate risk	Low to Intermediate	39 (34%) Low-risk 76 (66%) Intermediate-risk
Targeted Prostate Volume		34 (range 15 – 88) cc
Actual Treatment Time		55 (IQR 41 – 70) min



## **PSA** – TACT Primary Efficacy Endpoint **Successful**

**Primary Efficacy Endpoint:** Proportion of patients achieving PSA nadir  $\leq 25\%$  of pre-tx baseline value **Hypothesis:** TULSA-PRO would be of clinical interest if > 50% of patients had a PSA reduction  $\geq 75\%$ 

#### N=115

- Median PSA reduction to-date is 95%
- Median PSA nadir to-date 0.36 ng/ml
- 95% of pts (109/115) meeting endpoint of  $\geq$  75% PSA reduction
- Number of patients with 12-month QoL data is not yet large enough to assess



### **Case Study:** TACT Pivotal Trial:

67 year old Gleason 3+4 (L mid, R apex, R anterior) MRI-visible L mid anterior 14mm



PSA 6.0 ng/ml





PSA 0.28 ng/ml



PSA 0.09 ng/ml PROFCUND MEDICAL

### SONALLEVE

#### Technology platform for:

- Uterine Fibroid Treatment
- Bone Metastasis Pain
- Pediatric bone
- Hyperthermia

Over 200 publications from leading US and European clinicians and hospitals

CE Marked



## Uterine Fibroid: Symptom Relief & Durability

In normal commercial use, over 85% of patients experienced sustained symptom improvement

Months	Months Patients available for Symptom improvement			
post-procedure	follow-up	Improved	No relief	Worse
3 months	105	90 (85.7%)	14 (13.3%)	1 (1%)
6 months	99	92 (92.9%)	7 (7.1%)	0
12 months	89	78 (87.6%)	11 (12.4%)	0

#### Durability of the therapeutic effect compared to other uterine preserving treatments

Need for alternative treatment	@ 12 month	@ 24 month	References
Myomectomy	10.6 %	13-16.5 %	1,2,3,4
UAE (Uterine Artery Embolization)	7-10 %	12.7-23.7 %	5,6,7
MR-HIFU/MRgFUSNPV >60%	6 %	13 %	8

"Volumetric MR-guided high-intensity focused ultrasound ablation of uterine fibroids: treatment speed and factors influencing speed," M. J. Park, Y. S. Kim, B. Keserci, H. Rhim, and H. K. Lim, Eur Radiol, vol. 23, no. 4, pp. 943–950, Apr. 2013. 1. Gomy KR, Woodrum DA et al. Magnetic resonance–guided focused ultrasound of uterine leiomyomas: review of a 12-month outcome of 130 clinical patients. J Vasc Interv Radiol 2011 2. Subramanian S, Clark MA, Isaacson K. Outcome use associated with myomectomy. Job & Gyn. 2013, 95: 567 3. Nexhat FR, Roemisch M, et al. Recurrence rate after laparoscopic myomectomy. An Assoc Gynecol Laparosc. 198;5: 237-240 4. Rosserst et al. Long term results of laparoscopic myomectomy. Four one of the one patient background ablation for term factors in the speed and factors influencing speed, "M. J. Park, Y. S. Kim, B. Keserci, H. Rhim, and H. K. Lim, Eur Radiol, vol. 23, no. 4, pp. 943–950, Apr. 2013. 1. Gomy KR, Woodrum DA et al. Magnetic resonance–guided focused ultrasound of uterine fileomyomas: review of a 12-month outcome of 130 clinical patients. J Vasc Interv Radiol 2011 2. Subramanian S, Clark MA, Isaacson K. Outcome and resource use associated with myomectomy. Job & Gyn. 2546 3. Ross. 567 3. Nexhat FR, Roemisto M, et al. Recurrence rate after laparoscopic myomectomy. J Am Assoc Gynecol Laparosc. 198;5: 237-240 4. Rosserst et al. Long term results of laparosc. 2001;8: 495-500 6. Spies JB, Bruno J, et al. Long-term outcome of uterine attery embolization for leiomyomata. Obstet Gynecol. 2006; 101: 22-32 8. Sharp HT. Assessment of new technology in the treatment of lajoratic menorrhagia and uterine leiomyomata. Dotstet Gynecol. 2006; 103: 90–1003



### Sonalleve: Bone Metastasis Pain Therapy

Non-invasive alternative to radiotherapy

Most patients with slow growing tumors develop bone metastasis in the later stage of the disease. Bone changes and malformations irritate nerve endings creating significant pain for patients.

- Radiotherapy standard of care for bone mets, but 20-30% of patients do not respond
- Sonalleve as non-invasive alternative to radiotherapy
- Heating of bone surface, ablation of periosteal nerves
- Quick pain relieve in 2-3 days, vs. radiotherapy typical 3 weeks





### Exploring Further Indications on Current Platform Pediatrics, Hyperthermia







#### **Pediatrics: Osteoid osteoma**

- · Very painful, benign bone tumor in children and young adults
- MR-HIFU very effective, immediate pain relief and bone restructuring
- Standard of care is radiofrequency ablation (RFA, invasive)

#### Pediatrics: Desmoid tumors (Fibromatosis)

- Benign aggressively growing tumors, everywhere in the body
- Can cause severe (bulk) symptoms
- Surgery (+/- radiotherapy) is standard of care, but high risk of recurrence
- Successful MR-HIFU treatments presented as individual case studies

#### Hyperthermia

- Increase tumor sensitivity to Radiation and Chemo Therapy
- Local heating to 40 43°C, precise control of temperature and lesion size
- Adjuvant therapy to chemotherapy or radiation therapy
- Enabling technology for Local Drug Delivery





## Commercialization

### Strong Global Network of Clinical Partners



- Indicates Sonalleve site
- Indicates Sonalleve & TULSA-PRO site



## Market Introduction Strategy

- Expanded distribution partnerships with Philips and Siemens MR groups
  - Capital Sales
  - Co-selling
  - Co-marketing
- Build direct sales to drive procedure adoption and disposable sales
- Sales Focus
  - Sonalleve Asian market and academic hospitals in North America and Europe
  - TULSA-PRO Europe





## Reimbursement

#### US

PROCEDURE	APPROXIMATE HOSPITAL PAYMENT	APPROXIMATE SURGEON PAYMENT
Laparoscopic Radical Prostatectomy	\$10,000/\$20,000	\$1,450
Radiation Therapy (IMRT Simple, 40 Sessions)	\$40,000	Fee bundled into primary APC
Cryoablation	\$10,000	\$1,000

Initiation of clinical trial for salvage patients – Q4-2018, to support inclusion in NCCN guidelines as a recommended alternative

#### Germany

TULSA-PRO part of DRG payment to the hospital 3,963 Euros as of January 2018



## **Profound Medical**

- About disease treatment not organ removal

#### **Incision-free Procedures**

Real-Time MR guided







#### Treatment for prostate disease

- CE marked
- FDA expected H2-2019





Treatment for uterine fibroids, bone metastasis, pediatric

- CE marked
- China FDA approved for uterine fibroids

