

Dear patient,

LDR brachytherapy (seed implantation) has become one of the most popular treatments for prostate cancer since its introduction in 1986. It can be very flexibly adjusted to patients' individual needs and has now become the standard treatment for many forms of prostate cancer.

In the last 14 years we have treated more than 3,000 patients and are thus one of the most experienced brachytherapy centres in Europe. We work together with ICHOM (www.ichom.org), the international consortium for health outcomes measurement. The progress of treatment in all patients is recorded on a central database and assessed to continually improve treatment (see table right).

Individual care of our patients in a friendly and relaxed atmosphere is very important to us.

LDR brachytherapy can be provided either as outpatient or in-patient treatment, often in the context of integrated care contracts in interdisciplinary and sector-spanning cooperation models.

Treatment costs for seed implantation are absorbed by private health insurance, benefits and most statutory health insurers.

Please contact us if you require a consultation or treatment.

Hamburg, March 2017
Dr. Jörg Zimmermann & Dr. Petra Zimmermann

LDR brachytherapy

The strength of LDR brachytherapy (seed implantation) is that it is both effective and gentle. This distinguishes it from any other treatment procedures that are either effective or gentle. Patients are only slightly affected in their daily life. Seed implantation has, thus, for years been one of the most popular treatments for prostate cancer and a component of the current treatment recommendations of the following US and European specialised agencies: ABS, ESTRO, EAU and EORTC. In a world-wide meta-analysis in 2012 (Grimm et al, BJU 2012) the superiority of the brachytherapy procedure was confirmed at all risk stages over other forms of treatment. The NCCN (National Comprehensive Cancer Network) 2016 guidelines thus indicate brachytherapy procedures at nearly all tumour stages as being adequate treatments.

LDR brachytherapy for patients with:

- early diagnosed prostate cancer

In its original form, LDR brachytherapy includes the entire prostate at the early and middle-risk stages with an approximate safety margin of 8 - 10 mm and seminal vesicles, maintaining the nerve tissue surrounding the prostate. The long-term cure rate is up to 98%.

If the cancer is diagnosed particularly early and restricted to a sub-region of the prostate, the treatment area may be limited to the actual area of the tumour, and thus reduced. This "focal" brachytherapy is gentler than the standard procedure.

A special MRT or PET/CT with choline or PSMA tracer is needed to accurately locate the tumour.

Compared to conventional treatment methods (radical operation, external irradiation), the side effects of LDR brachytherapy are very slight in each case.

Local advanced prostate cancer

The long-term cure rate of LDR brachytherapy even for advanced forms of prostate cancer (Gleason 8,9,10, PSA > 20 ng/ml) in combination with external radiotherapy, and possibly hormone therapy, is still around 80 - 90%. Hence, it is considerably superior to conventional therapy methods (radical operation, primary external irradiation). LDR brachytherapy assumes the important work of increasing the local dose on the largest main tumour.

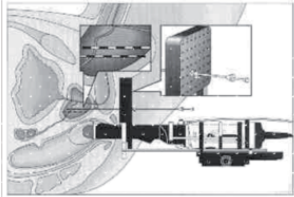


Fig. 2. Schematic diagram of operation

- Local recurrent prostate cancer

After a single external dose of irradiation, patients quite often suffer a tumour relapse because of an insufficient primary irradiation dose. Even after a primary radical prostatectomy (mainly with a modern nerve-sparing OP procedure) and after a primary seed implantation (quite rare), a further local tumour growth may appear. LDR brachytherapy is also an effective treatment in this situation. It is usually provided here as a focal treatment

- Prostate cancer after TURP

Even patients who have previously undergone a TURP (curettage, laser treatment) of a previously-enlarged prostate may be successfully treated with LDR brachytherapy.

Groups of risk	n	Percentage of progression%
Low risk	496	97.4%
Intermediate risk	365	91.8%
High risk	197	87.8%
cT1c	577	94.98%
cT2a	197	94.42%
cT2b	131	90.08%
cT2c	145	91.72%

Table: No relapse 5 years after brachytherapy, own collective, No.=1058
Curative patients treated between 2002 and 2010.

Course of the treatment

Irradiation plotting and implementation

In general anaesthesia or spinal anaesthesia, an 3D ultrasound of the prostate through the rectum is first performed. Using ultrasound images, the positions of individual seeds in all three spatial coordinates are accurately calculated. The seeds are then inserted into the prostate with pinpoint precision through the perineum (see Fig. 2). The required precision is achieved by continuously aligning the current ultrasound images electronically with the irradiation plotting. This procedure is called 'online plotting', where a single operation suffices. The radiation emitted by the seeds destroys the cancer cells over the next 10 months. In addition, to be able to treat the region around the prostate capsule adequately (safety margin), we only use seeds in chain form (STRANDS). This chain technique virtually excludes seed migration.

Side effects

Serious side effects from the treatment are rare. The patient can return to normal life within a few days. No further treatment is necessary. Urine incontinence, whether through single or combined treatments only occurs in exceptional cases. There will be a temporary weakening or irritation of the jet of urine. Erection is sustained in the majority of patients. Nevertheless, in the event of erectile dysfunction, this usually only occurs only some years – thus, considerably later than after radical surgery.

Additional measures

The patient can actively contribute to the success of the treatment. Sufficient fluid intake (> 2 litres per day) and reduction of the intake of coffee, alcohol, and acidic or spicy foods, in particular, help reduce the typical irritation on urination that occurs over several months. We also recommend improving immunological response and urination through full-body hyperthermia treatment using special infrared lamps (www.hyperthermie-hamburg.de).

Follow-up, after-care

A CT scan, performed 4-6 weeks after the operation, further checks the position of the seeds. The results of this CT scan will very rarely indicate that the seeds will have to be re-implanted in a further (minor) operation. A follow-up appointment for radiation therapy will sent out within the year, and all patients will receive a special radiation protection aftercare pass. Oncological aftercare should always be provided by a urologist.

If the tumour disease unexpectedly recurs or persists, a further seed implantation operation may be performed, as and where necessary. Depending on the specific situation, a secondary radical operation, external irradiation or hormone treatment may be advisable.



Brachytherapy practice
Dr. Jörg Zimmermann, MD

Address Alstertal Practice Centre
2 Hamburg
22391 Hamburg
Tel 040-548873-25
Fax 040-548873-24
Email info@brachytherapie-hamburg.de
Internet www.brachytherapie-hamburg.de

Consulting hours Mon-Fri: 9.30 am - 1 pm.
Mon, Tue, Thu: 2.00 pm - 5.30 pm
By appointment only



Brachytherapy practice
Dr. Jörg Zimmermann, MD

Interdisciplinary Prostate Cancer Centre

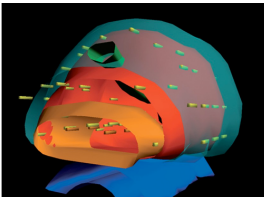


Fig. 3D model of prostate, organs at high risk, and seeds

Patient Information
Prostate Carcinoma
LDR Brachytherapy
(Seed Implantation)

www.brachytherapie-hamburg.de