

Patient Information Sheet for Children aged 6 through 12 years

"Therapy Trial to Determine the Safety and Efficacy of Heavy Ion Radiotherapy in Patients with Osteosarcoma"

Dear

your physician has suggested to include you and the treatment of the tumor which you have developed within your bone(s) in a clinical study. He/She has already talked to your legal guardians about this plan. It is now very important to us to inform you about everything concerning your future treatment:

You have been diagnosed with having a special kind of bone cancer which we call an "osteosarcoma". Some people stick with simply calling it a *bone tumor*.

Without treatment this tumor will most likely grow and seriously threaten your life.

Therefore, it is necessary to treat your body with a medicine commonly referred to as „chemotherapy“. Additionally, however, there is urgent need to take away the tumor right where it is growing. In most cases this can be done by surgery; in your case though, the tumor cannot be taken away by a surgeon, because it is too close to very important organs, or you / your legal guardians refused an operation because of personal reasons. In the latter case, we have to stress that complete surgical tumor resection is still the method of choice in osteosarcoma. Efficacy of heavy ion radiotherapy (HIT) has not yet been shown to be as effective as an operation.

Radiotherapy with photons could be an alternative but is also not investigated in systematic trials. To date, other alternatives are not available, without local tumor therapy this disease is not curable.

However, HIT might be suitable to treat the tumor in your bones.

What is to be done

In your case, after proton therapy for approximately 4 and a half weeks a very new kind of radiation therapy will be administered to the tumor. This kind of therapy is called „heavy ion radiotherapy“ (HIT), because the physicians will use very small, but pretty heavy particles in order to reach and fight against your tumor without damaging any part of your body that needs to be "flown through" on the way to the tumor site. Unfortunately, for the whole treatment series you will have to go and see the radiation

doctors five to six days a week for maybe approximately six weeks. Any of your visits will probably last about 20 minutes, and every time, you will be asked to lie down on a table and stay really calm without moving or talking. In order to help you to not move during the treatment, we may build a *body cast* for you in which you will have to lie in during the irradiation. You will be able to get out of the body cast as soon as the treatment is over. If necessary, you can also receive medicine that will make you sleep for a short while. We call this anesthesia.

Things that could happen to you during or after heavy ion therapy

Usually, HIT is not very exhausting or weakening to the patient. Side effects (acute and late) of HIT depend on the localization of the tumor and the radiation.

Acute side effects might be:

- In cases of pelvic tumors: **depression of hematopoiesis** with decrease of the red cells, leucocytes or platelets. Sometimes blood or platelet transfusion will be necessary.
- Mucosa damage: **a) gastrointestinal tract:** ulcers, chronic inflammation, colic, diarrhoea, bowel stenosis. **b) urinary bladder:** inflammation, contracted bladder. In rare cases, surgery has to be done
- The **skin** close to the tumor and included in the area of radiation, might begin to itch and burn - very similar to symptoms you might already know from a sunburn. Sometimes blistering is possible.
- In cases of head and neck tumors: **CNS damage** with sickness, vomiting, central nerve palsy, elevated intracranial pressure, headach, dizziness
- **Skeletal system:** necrosis, fracture, joint dysfunction, disturbance of growth

Most side effects disappear after the end of HIT.

Sometimes, **long term defects** are possible:

- **Gastrointestinal tract:** stenosis or perforation with need for surgical intervention, chronic inflammation
- **CNS:** central nerve palsy, cerebral palsy, impaired vision, defective hearing (rare)
- Disturbance of growth
- secondary malignancies

- arteriosclerosis
- Incontinence (rare)
- Impotence (rare)
- Infertility

For further examinations, you and your legal guardians have to come for regular **follow-up visits** to the department of radiotherapy of the University of Heidelberg: **6 weeks, 6, 12, 24 and 36 months after HIT.**

What if you do not want to be part in this study

Nobody has to take part in any clinical study; also, your participation is absolutely voluntary. You may let us know at any time that you do not wish to participate at all or that you do not wish to participate any longer. Nobody will be disappointed or mad with you. If you wish, we will also destroy all the documents that have been kept about your case. However, we do ask you and your legal guardians to inform the doctors in case you do not want to participate any longer.

What happens to the results and documents of the study?

Any results that we obtain considering your case will be written down in a special scrap book that does not have your name but a number printed on it. Except for your doctor and those people involved in this study, nobody knows who the patients are, whose results were kept in this book. This is what the medical doctor call „pseudonymization“.

Do you have any questions?

If you have any additional questions, don't be afraid and please feel free to ask us before we start the treatment.