Non-invasive characterization of paediatric brain tumours using metabolic imaging at high magnetic field

No registrations found.

Ethical review	Not applicable
Status	Pending
Health condition type	-
Study type	Interventional

Summary

ID

NL-OMON24537

Source NTR

Brief title MITCH

Health condition

ow grade glioma (LGG) and diffuse pontine glioma (DIPG)

Sponsors and support

Primary sponsor: UMC Utrecht Source(s) of monetary or material Support: Grant

Intervention

Outcome measures

Primary outcome

To determine whether metabolic imaging at 7 Tesla is feasible and suitable to detect changes in phospholipids and APT levels in paediatric brain tumours

Secondary outcome

 \cdot To investigate the use of non-invasive metabolic imaging to evaluate treatment effects of paediatric brain tumours;

 \cdot To investigate the use of non-invasive metabolic imaging to evaluate aggressiveness of paediatric brain tumours and if available compare it with histology and molecular biology

Study description

Background summary

Brain tumours are one of the leading causes of death in children. If possible, removing the tumour by surgery followed by radiotherapy and/or chemotherapy is nowadays the proposed treatment. But often the tumour cannot be removed and only chemo and/or radiation therapy are considered as treatment. During the treatment patients are monitored with structural imaging to evaluate response to therapy and its disease free survival. However, changes seen on imaging do not always reflect a change in tumour behaviour or growth; it might also reflect a reaction of the surrounding normal brain tissue on the treatment. From a diagnostic perspective, we are lacking a tool that can non-invasively identify tumour activity and indicate the aggressiveness of that piece of tumour. Information from metabolic processes in the tumour and surrounding tissue will help to understand tumour physiology, which will improve diagnosis and treatment evaluation, and may even help in choosing treatment strategy.

Objective: To determine whether metabolic imaging at 7 Tesla is feasible and suitable to detect changes in phospholipids and APT levels in paediatric brain tumours

Study objective

We hypothesize that information from metabolic processes in the paediatric brain tumour and surrounding tissue will help to understand tumour physiology, which will improve diagnosis and treatment evaluation.

Study design

01-03-2020: start inclusion 01-09-2021: end inclusion 01-03-2022: end study

Intervention

MRI at 7T

Contacts

Public UMC Utrecht Evita Wiegers

0031887553197 Scientific UMC Utrecht Evita Wiegers

0031887553197

Eligibility criteria

Inclusion criteria

- Children, 5-18 years diagnosed with a possible low grade glioma (LGG) or diffuse pontine glioma (DIPG)

- Children must be able to undergo MRI without anaesthesia;

- Informed and having given informed consent (either by patient and / or parents / legal guardian).

Exclusion criteria

- The presence of claustrophobia;

- Patients from who it is known at the time of inclusion that they will undergo tumour resection within 1 month;

- MRI-specific exclusion criteria, such as metal implants. Screening for MRI specific exclusion criteria will be done using the regular MRI (at 7 Tesla) safety screening.

- Refusal or inability to provide informed consent by patient and / or parent / legal guardian.

Study design

Design

Study type:

Interventional

Intervention model:	Other
Allocation:	Non controlled trial
Masking:	Open (masking not used)
Control:	N/A , unknown

Recruitment

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Recruitment status:	Pending
Start date (anticipated):	01-03-2020
Enrollment:	25
Туре:	Anticipated

IPD sharing statement

Plan to share IPD: Undecided

Ethics review

Not applicable Application type:

Not applicable

Study registrations

Followed up by the following (possibly more current) registration

No registrations found.

Other (possibly less up-to-date) registrations in this register

No registrations found.

In other registers

Register	ID
NTR-new	NL8285
Other	METC Utrecht : METC 19/791

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Study results