MC1374 / 13-005106

Evaluating the Impact of 18F-DOPA-PET on Radiotherapy Planning for Newly Diagnosed Gliomas

NCT01991977

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MAYO CLINIC

Name and Clinic Number

Approval Date: **September 6, 2018**
Not to be used after: **September 5, 2019**

RESEARCH PARTICIPANT CONSENT AND PRIVACY AUTHORIZATION FORM

Study Title: MC1374, Evaluating the impact of 18F-DOPA-PET on radiotherapy planning for gliomas

IRB#: 13-005106

Principal Investigator: Dr. Debra Brinkmann and Colleagues

Please read this information carefully. It tells you important things about this research study. A member of our research team will talk to you about taking part in this research study. If you have questions at any time, please ask us.

Take your time to decide. Feel free to discuss the study with your family, friends, and healthcare provider before you make your decision.

To help you decide if you want to take part in this study, you should know:

- Taking part in this study is completely voluntary.
- You can choose not to participate.
- You are free to change your mind at any time if you choose to participate.
- Your decision won't cause any penalties or loss of benefits to which you're otherwise entitled.
- Your decision won't change the access to medical care you get at Mayo Clinic now or in the future if you choose not to participate or discontinue your participation.

For purposes of this form, Mayo Clinic refers to Mayo Clinic in Arizona, Florida and Rochester, Minnesota; Mayo Clinic Health System; and all owned and affiliated clinics, hospitals, and entities.

If you decide to take part in this research study, you will sign this consent form to show that you want to take part. We will give you a copy of this form to keep. A copy of this form will be put in your medical record.

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CONTACT INFORMATION

You can contact …	At …	If you have questions about …
Principal Investigators: Dr. Debra H. Brinkmann Dr. Nadia Laack	**Phone:** (507) 284-2511 **Address:** Mayo Clinic Cancer Center 200 First Street SW Rochester, MN 55905	▪ Study tests and procedures ▪ Research-related injuries or emergencies ▪ Any research-related concerns or complaints ▪ Withdrawing from the research study ▪ Materials you receive ▪ Research-related appointments
Mayo Clinic Institutional Review Board (IRB)	**Phone:** (507) 266-4000 **Toll-Free:** (866) 273-4681	▪ Rights of a research participant
Research Subject Advocate **(The RSA is independent of the Study Team)**	**Phone:** (507) 266-9372 **Toll-Free:** (866) 273-4681 **E-mail:** researchsubjectadvocate@mayo.edu	▪ Rights of a research participant ▪ Any research-related concerns or complaints ▪ Use of your Protected Health Information ▪ Stopping your authorization to use your Protected Health Information
Research Billing	**Rochester, MN:** (507) 266-5670	▪ Billing or insurance related to this research study

Other Information:
A description of this clinical trial will be available on http://www.ClinicalTrials.gov, as required by U.S. Law. This Website will not include information that can identify you. At most, the Website will include a summary of the results. You can search this Website at any time.

1. Why are you being asked to take part in this research study?

You are being asked to take part in this research study because you have a malignant glioma and it has been recommended that you undergo radiation therapy of this tumor.

2. Why is this research study being done?

For most brain tumors, radiation treatment is guided by a Magnetic Resonance Imaging (MRI) scan. In this study, information from a special scan, called a Positron Emission Tomography (PET) scan, with Computed Tomography (CT) on a PET/CT scanner, will also be used to image the tumor and guide your radiation doctor in determining locations to treat with radiation. This type of scan has shown promise in being able to better distinguish tumor from normal brain tissue and may help to more accurately plan radiation treatment. This type of scan can also assist the radiation doctor in identifying the most aggressive regions of the tumor. The goals of this study are to use the PET scan to help determine where the disease is that needs to be treated with radiation, as well as where the most aggressive areas of the tumor are to target with higher than standard doses of radiation, in order to improve the effectiveness of radiation in this tumor.

The 18F-FDOPA used in this study is considered investigational, which means it has either not been approved by the Food and Drug Administration (FDA) for routine clinical use or for the use described in this study. However the FDA has allowed the use of ^{18}F-FDOPA in this research study.

3. Information you should know

Who is Funding the Study?
A grant from the National Institutes of Health will pay Mayo Clinic to cover the costs related to running the study.

4. How long will you be in this research study?

To best understand the information obtained from the PET, we will be asking for permission to request your follow-up MRI scans and records for up to a maximum of 5 years or until the time your tumor appears to grow or come back.

5. What will happen to you while you are in this research study?

In order to qualify for this study, you must have been seen by a radiation oncologist who has recommended you undergo radiation therapy to treat your brain tumor. To participate in this study, you must be willing to have your treatment in the Mayo Clinic. In addition, if you are a female who could potentially get pregnant, you will need to have a pregnancy test to make sure you are not pregnant.

If you are able to go on this study, you will have several additional appointments for a special scan of your brain. The timing of these will be 1) before you start your radiation treatment, 2) after you have finished all of your radiation treatments, and 3) when you come for your regularly scheduled follow-up appointments for a maximum of 5 years or until the time your tumor appears to grow or come back. During the first year after your radiation treatments, you will typically have follow-up appointments every 2 months, although your physician may decide to schedule these more or less frequently as needed. The frequency of your follow-up appointments will decrease with each year after your radiation treatments: typically every 3 months for the second year, every 4 months for the third year, and every 6 months for the fourth and fifth years. Therefore if your tumor did not appear to grow or come back for 5 years, you may have a maximum of 16 follow-up appointments with these special scans. Each of these special scans will require about 1 hour and will be done in the Nuclear Medicine Department at the Mayo Clinic, Rochester.

Neurological Exams
You will also have a neurological assessment, physical exam, and a test called an MMSE. The MMSE stands for “Mini-mental status exam”. You will be asked several questions about your memory and your ability to concentrate. The MMSE test is a way of telling how the treatment is affecting your brain tumor.

The special scan, called a PET scan, is a metabolic imaging technique which takes advantage of how tumor cells take up nutrients differently than normal tissue. This study is using a nutrient called 18F-FDOPA in a new way to try to better determine where and how big your tumor is, as well as how

aggressive it is. The night before your PET scan, drinking a lot of fluids 24 hours before the exam will be encouraged, and you will be instructed to follow a four hour food fast prior to your PET/CT scan.

PET Visits
At your PET appointment, you will be positioned in a PET/CT scanner, and a small amount of radioactive material will be injected intravenously. The material will move through your blood into your tumor. CT (x-ray) images will be acquired, which will be used to correct the PET data for how your body reduces the PET signal, and 10 minutes after injection PET scan will be taken for no more than 30 minutes. The part of the brain that takes up the radioactive material will be identified by the PET scanner using special detectors.

PET scans are not regularly done for radiotherapy planning of brain tumors, and this PET scan will be in addition to the standard pre-radiation MRI scan of your brain. The resulting images from the PET scans will be used together with the MRI scans to guide your radiation oncologist in identifying the entire area of tumor to treat as well as targeting the most aggressive part of the tumor with a higher dose of radiation.

PET scans are not regularly done after radiotherapy treatment for follow-up, and these PET scans will be in addition to the standard follow-up appointments for MRI scans of your brain. The information from the PET scans will be used together with the MRI scans to detect any areas that may be changing to help your doctors identify earlier disease that may be getting worse.

MRI Visits
For your regular MRI examinations, you will receive a dose of Gadolinium contrast agent that is routinely used in MRI brain scanning. Although the Food and Drug Administration (FDA) has approved Gadolinium for clinical use up to triple dose, the routine amount at Mayo Clinic is currently a single dose. If you are to participate in this study, each of your standard MRI examinations performed at Mayo Clinic Rochester will include additional scans that will add approximately 10 minutes to your normal exam. One of those exams is called Perfusion MRI. Perfusion Imaging can add additional information about the blood vessels in brain tumors, which can help in diagnosis and treatment planning. This information is typically not provided by regular MR examinations. The information about tumor blood vessels is used by the radiologist and the other doctors in combination with your regular MRI images to potentially provide a more accurate diagnosis. This can possibly improve treatment planning and clinical management of patients with brain tumors.

Questionnaires
You will also be asked to fill out a Quality of Life questionnaire, which should take about 5-10 minutes to complete. You will fill this out before you start radiation, at the end of radiation, when you return for follow up one month after radiation, and then each time you have an MRI scan, or every 2 months (for a maximum of 6 times).

Follow Up Visits
For each of the follow up visits, you will undergo a neurological history and exam, an MMSE, a pregnancy test if you are a female who could potentially get pregnant, a PET/CT scan, an MRI scan and a Quality of Life questionnaire.

6. What are the possible risks or discomforts from being in this research study?

PET scan:

- During the injection of the radioactive material, you will feel a sharp stinging sensation and possible pain as the material is injected intravenously, but it disappears quickly when the injection is complete.
- There is a very small risk of infection. Precautions are taken to minimize this risk including the application of topical antibiotic ointment to the injection sites to kill any bacteria.
- There is a very small risk that you may develop an allergic reaction to the ^{18}F-FDOPA radio labeled tracer. There are no reported cases of such an allergy in the literature. Nonetheless precautions will be taken as follows. Should you develop any symptoms suggestive of an allergic reaction, the PET scan will be stopped. You will be closely watched for 2 hours and sent to the hospital emergency room should there be any evidence of an allergic reaction.

You will be exposed to radiation from the PET/CT imaging in this research study. The amount of radiation you will get has a low risk of harmful effects.

Dose escalation:
Although similar research has not shown any increase in side effects from the doses being used in this study over that of standard doses of radiation, it is possible you may be more tired and/or have more skin redness or peeling on the scalp. Long term you may be at higher risk for injury to the brain right beside the tumor called necrosis. Brain injury can occur after standard dose of radiation but may be a higher risk with higher doses of radiation. This brain injury may result in increase in your tumor symptoms, may require steroids or other medicines to treat, and rarely may require surgery to remove.

Radiation volume:
Because ^{18}F-FDOPA imaging may reveal areas of tumor not evident on standard imaging, it is possible that the radiation volume may be larger than it would have been without the additional ^{18}F-FDOPA information. Although the purpose of the study is to determine if finding and treating these hidden areas improves outcomes, it is possible that treating a larger volume of brain tissue could result in increased risk of side effects of treatment. Fatigue, sleepiness, risk of brain injury or necrosis, and risks of changes in memory or thinking may all be higher in patients with larger radiation volumes.

Pregnancy and Birth Control:

1) Will women of child-bearing-potential be allowed to participate in this study?
   Yes: Women of child-bearing-potential will be able to participate in this study if they have a negative pregnancy test and agree to use acceptable birth control (see #5) since the risks to an unborn child are either unknown or potentially serious.

2) Will pregnant and/or nursing women be allowed to participate in this study?
   No: There is not enough medical information to know what the risks might be to a breast-fed infant or to an unborn child carried by a woman who takes part in this study. Breast-feeding mothers must stop breast-feeding to take part in this study.

3) Do you need to have a pregnancy test done to be part of the study?
   Yes: As part of this study a pregnancy test is required for all women who are able to become pregnant. A urine pregnancy test will be done. You will be told the results of the pregnancy test. If the pregnancy test is positive, you will not be able to take part in the study.

4) Will men who are able to father a child be allowed to participate in this study?
   Yes: Men who are able to father a child will be able to participate in this study if they agree to use acceptable birth control (see #5) since the risks to an unborn child are either unknown or potentially serious.

5) What types of birth control are acceptable?
   - Surgical sterilization
   - Approved hormonal contraceptives (such as birth control pills, Depo-Provera)
   - Barrier methods (such as a condom or diaphragm) used with a spermicide
   - An intrauterine device (IUD)
   - Abstinence

Risk summary
Some side effects may not be known. Side effects may range from mild to life-threatening. Other drugs may be given to make side effects less serious and less uncomfortable. Talk to the researcher and/or your healthcare provider about side effects and ask any other questions.

7. Are there reasons you might leave this research study early?

You may decide to stop at any time. You should tell the Principal Investigator if you decide to stop and you will be advised whether any additional tests may need to be done for your safety.

In addition, the Principal Investigator or Mayo may stop you from taking part in this study at any time:

- if it is in your best clinical interest,
- if you do not follow the study procedures,
- if the study is stopped.

If you leave this research study early, or are withdrawn from the study, no more information about you will be collected; however, information already collected about you in the study may continue to be used.

We will tell you about any new information that may affect your willingness to stay in the research study.

8. What if you are injured from your participation in this research study?

Where to get help:
If you think you have suffered a research-related injury, you should promptly notify the Principal Investigator listed in the Contact Information at the beginning of this form. Mayo Clinic will offer care for research-related injuries, including first aid, emergency treatment and follow-up care as needed.

Who will pay for the treatment of research related injuries:
Care for such research-related injuries will be billed in the ordinary manner, to you or your insurance. You will be responsible for all treatment costs not covered by your insurance, including deductibles, co-payments and coinsurance.

9. What are the possible benefits from being in this research study?

This study may not make your health better. Although there may be no expected, direct, benefits to you from participating in this study, decisions regarding your case will include experimental as well as standard imaging, where the additional information from experimental tests may influence the extent of the region targeted with radiation, and will identify the area with the most aggressive disease which will receive a higher than standard radiation dose. For the most part, by participating in this study you will help doctors learn how your tumor responds to radiation treatment when using this new type of imaging to better identify where your tumor is and treating the area with the most aggressive disease to a higher dose, which will help future patients with gliomas.

10. What alternative do you have if you choose not to participate in this research study?

You don't have to be in this study to receive treatment for your condition. Your other choices may include:

- Getting treatment or care for your cancer without being in a study
- Taking part in another study
- Getting no treatment

Talk to the Principal Investigator or your doctor if you have any questions about any of these treatments or procedures.

11. What tests or procedures will you need to pay for if you take part in this research study?

The tests and procedures you will not need to pay for are:

- Pregnancy test, if applicable
- PET/CT scan prior to radiotherapy
- PET/CT scans after radiotherapy for follow-up imaging
- ^{18}F-FDOPA tracer for each PET scan
- 3T MRI Scan, if not clinically indicated

However, you and/or your health plan will need to pay for all other tests and procedures that you would normally have as part of your regular medical care. These tests and procedures include but are not limited to:

- Physical exam
- Neuro history and exam
- Clinical blood tests
- MRI with contrast for radiotherapy planning
- Radiotherapy
- MRI with contrast for follow-up imaging
- 3T MRI Scan, if clinically indicated

Before you take part in this study, you should call your insurer to find out if the cost of these tests and/or procedures will be covered. Some insurers will not pay for these costs. You will have to pay for any costs not covered by your insurance.

12. Will you be paid for taking part in this research study?

You won't be paid for taking part in this study.

13. What will happen to your samples?

Your samples will be used for this study. When the study is done, they will be destroyed.

14. How will your privacy and the confidentiality of your records be protected?

Mayo Clinic is committed to protecting the confidentiality of information obtained about you in connection with this research study.

Various methods are used to safeguard confidentiality. Some or all of the following may be used in this study: assigning a specific code or registration number to each participant's data and samples, research materials stored in locked areas, password protected data stored on a computer. If the results of the research are made public, information that identifies you will not be used.

During this research, information about your health will be collected. Under Federal law called the Privacy Rule, health information is private. However, there are exceptions to this rule, and you should know who may be able to see, use and share your health information for research and why they may need to do so. Information about you and your health cannot be used in this research study without your written permission. If you sign this form, it will provide that permission.

Health information may be collected about you from:

- Past, present and future medical records
- Research procedures, including research office visits, tests, interviews and questionnaires

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Why will this information be used and/or given to others?

- To do the research
- To report the results
- To see if the research was done correctly

If the results of this study are made public, information that identifies you will not be used.

Who may use or share your health information?

- Mayo Clinic research staff involved in this study.

With whom may your health information be shared?

- The Mayo Clinic Institutional Review Board that oversees the research
- Other Mayo Clinic physicians involved in your clinical care
- Researchers involved in this study at other institutions
- Federal and State agencies (such as the Food and Drug Administration, the Department of Health and Human Services, the National Institutes of Health and other United States agencies) or government agencies in other countries that oversee or review research
- The sponsor(s) of this study and the people or groups it hires to help perform this research
- A group that oversees the data (study information) and safety of this research

Is your health information protected after it has been shared with others?

Mayo Clinic asks anyone who receives your health information from us to protect your privacy; however, once your information is shared outside Mayo Clinic, we cannot promise that it will remain private and it may no longer be protected by the Privacy Rule.

Your Privacy Rights

You do not have to sign this form, but if you do not, you cannot take part in this research study.

If you cancel your permission to use or share your health information, your participation in this study will end and no more information about you will be collected; however, information already collected about you in the study may continue to be used.

If you choose not to take part or if you withdraw from this study, it will not harm your relationship with your own doctors or with Mayo Clinic.

You can cancel your permission to use or share your health information at any time by sending a letter to the address below:

Mayo Clinic
Office for Human Research Protection
ATTN: Notice of Revocation of Authorization
200 1st Street SW
Rochester, MN 55905

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Alternatively, you may cancel your permission by emailing the Mayo Clinic Research Subject Advocate at: researchsubjectadvocate@mayo.edu.

Please be sure to include in your letter or email:

- The name of the Principal Investigator,
- The study IRB number and /or study name, and
- Your contact information.

Your permission lasts until the end of this study, unless you cancel it. Because research is an ongoing process, we cannot give you an exact date when the study will end.

ENROLLMENT AND PERMISSION SIGNATURES

Your signature documents your permission to take part in this research.

	/ /	: AM/PM
Printed Name	Date	Time

Signature

Person Obtaining Consent

- I have explained the research study to the participant.
- I have answered all questions about this research study to the best of my ability.

	/ /	: AM/PM
Printed Name	Date	Time

Signature