# The BIOPSY-trial: Biopsy versus Resection in Elderly Glioblastoma Patients. A prospective cohort study.

Published: 06-04-2023
Last updated: 09-04-2024

This study is performed to investigate the optimal strategy for maintaining quality of life and improving survival in elderly patients (65 years or older) diagnosed with primary GBM. Primary endpoints of the study are: 1) Proportion of patients with...

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| **Ethical review** | Not approved |
| **Status** | Will not start |
| **Health condition type** | Nervous system neoplasms malignant and unspecified NEC |
| **Study type** | Observational non invasive |

## Summary

### ID

NL-OMON52545

**Source**
ToetsingOnline

**Brief title**
The BIOPSY-trial

### Condition

- Nervous system neoplasms malignant and unspecified NEC
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**Synonym**
Brain malignancy, brain tumor

**Research involving**
Human

### Sponsors and support

**Primary sponsor:** Erasmus MC, Universitair Medisch Centrum Rotterdam
**Source(s) of monetary or material Support:** KWF

## Intervention

**Keyword:** Biopsy, Elderly, Glioblastoma, Resection

## Outcome measures

### Primary outcome

1) Overall survival (OS) at 12 months, defined as the time from diagnosis to the death of the patient from any cause.

2) The difference in mean changes scores of physical functioning, as measured with the EORTC QLQ-C30 physical functioning scale, between the two groups at 6 weeks and 3 months after surgery compared to mean score on baseline.

### Secondary outcome

1) Progression-free survival (PFS), defined as the time from diagnosis to disease progression (increase in residual tumor volume of more than 25%, or occurrence of a new tumor lesion with a volume greater than 0.175cm3), or death. As according to the RANO criteria.

2) The difference in mean score of physical functioning, as measured with the EORTC QLQ-C30 physical scale, between the two groups at 6 months and 12 months after surgery compared to mean score on baseline.

3) The proportion of patients with deterioration, improvement or stable physical functioning, as measured with the EORTC QLQ-C30 physical scale at 6 weeks, 3 months, 6 months and 12 months after surgery compared to baseline

4) Changes in the mean scores on the other health-related quality of life (HRQoL) scales at 6 weeks, 3 months, 6 months and 12 months after surgery compared to baseline scores. These HRQoL aspects will be measured using the EORTC QLQ-C30, EORTC QLQ-BN20 and EQ-5D questionnaires.

5) Proportion of patients with NIHSS (National Institute of Health Stroke Scale) deterioration, improvement or stability at 6 weeks, 3 months, 6 months and 12 months after surgery compared to baseline, in which deterioration is defined as an increase of at least one point and improvement as a decrease of at least one point on the total NIHSS score compared to this score at baseline.

6) Differences between the groups in cognitive and neurolinguistic screening at 3 months, compared to baseline as measured by the Aphasia Bedside Check (ABC), Shortened Token Test, verbal fluency (category and letter), Montreal Cognitive Assessment (MOCA) and, optionally, CAT-NL Picture Description and Object Naming.

7) Comparison of the (S)AEs in both groups.

8) Cost-effectiveness between the two treatments.

# Study description

**Background summary**

Glioblastoma Multiforme (GBM) is the most common glial tumor. The prognosis of patients diagnosed with GBM remains poor, despite intensive treatments. No

objective guidelines or well-designed prospective trials exist regarding the optimal surgical treatment of GBM, especially not in the elderly. The decision for a certain type of surgery, e.g. resection surgery or tissue biopsy, is usually subjective, as it is based on the experience of the surgeon. Due to this, large differences in surgical management strategies exist between neurosurgical centers. Retrospective literature elicits the importance of maximum tumor resection to prolong survival of GBM patients, especially in older patients. This is however exactly the subgroup of patients that is, with the current subjective system, more likely to undergo a biopsy. Maximum safe tumor resection could however be more beneficial for survival in this patient category. On the other hand, surgery has the risk of inducing neurological deficits and therefore the chance of seriously damaging the patient with a rather low life expectancy.

## Study objective

This study is performed to investigate the optimal strategy for maintaining quality of life and improving survival in elderly patients (65 years or older) diagnosed with primary GBM. Primary endpoints of the study are: 1) Proportion of patients with NIHSS (National Institute of Health Stroke Scale) deterioration at 6 weeks after surgery, in which deterioration is defined as an increase of at least one point on the total NIHSS score compared to this score at baseline 2) Overall survival (OS) at 12 months, defined as the time from diagnosis to the death of the patient from any cause. Secondary endpoints are: 1) Progression-free survival (PFS) at 6 months and 12 months after surgery, defined as the time from diagnosis to disease progression (increase in residual tumor volume of more than 25%, or occurrence of a new tumor lesion with a volume greater than 0.175cm3), or death 2) Health-related quality of life (HRQoL) at 6 weeks, 3 months, 6 months and 12 months after surgery. HRQoL will be measured using the QLQ-C30, QLQ-BN20 and EQ-5D questionnaires.

## Study design

This trial is set up as a prospective randomized controlled trial. Patients who are considered eligible for participation in the study based on clinical and radiological parameters will be randomized into either biopsy or maximum safe tumor resection, after written informed consent has been obtained. Patients in whom the diagnosis GBM is not confirmed in histological analyses will be excluded from the study. After surgery, patients will receive standard adjuvant treatment with concomitant Temozolomide and radiation therapy, and standard follow-up. Total study duration will be 4 years, of which 3 years will comprise patient inclusion, with a follow-up duration of 1 year.

## Intervention

Biopsy versus maximum safe tumor resection.

**Study burden and risks**

Patients theoretically eligible for GBM resection or biopsy will be included. Through shared-decision making patients and their treating physicians will decide upon resection or biopsy. No alterations will be made to the standard care, since both surgical modalities are widely used, so there will be no added risk associated with participation.

Three quality of life questionnaires and 1 neurological examination will take place preoperatively and 6 weeks, 3 months, 6 months and 12 months after the surgery. Neuro-linguistic and cognitive testing will take place only pre-operatively and once at 3 months postoperatively. The burden of this trial for the patient is therefore confined.

# Contacts

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# Trial sites

## Listed location countries

Netherlands

# Eligibility criteria

**Age**
Elderly (65 years and older)

## Inclusion criteria

1. Age >=70 years
2. Tumor diagnosed as glioblastoma on MRI with distinct ring-like pattern of contrast enhancement with thick irregular walls and a core area reduced signal suggestive of tumor necrosis as assessed by the surgeon.
3. Karnofsky Performance Score (KPS) >=70
4. Written Informed consent

## Exclusion criteria

1. Tumors of the cerebellum, brain stem or midline
2. Multifocal contrast enhancing lesions
3. Substantial non-contrast enhancing tumor areas suggesting low grade gliomas with malignant transformation
4. Medical reasons precluding MRI (e.g. pacemaker)
5. Inability to give consent as assessed by neurosurgeon (e.g. language barrier)
6. Severe aphasia prohibiting neurolinguistic testing and comprehension of informed consent
7. Previous brain tumor surgery
8. Previous low-grade glioma
9. Second primary malignancy within the past 5 years with the exception of adequately treated in situ carcinoma of any organ or basal cell carcinoma of the skin.

# Study design

## Design

**Study type:** Observational non invasive

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|---|---|
| Masking: | Open (masking not used) |
| Control: | Uncontrolled |
| Primary purpose: | Treatment |

## Recruitment

NL

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| Recruitment status: | Will not start |
| Enrollment: | 325 |

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|---|---|
| Type: | Anticipated |

## Ethics review

Not approved

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| Date: | 06-04-2023 |
| Application type: | First submission |
| Review commission: | METC Erasmus MC, Universitair Medisch Centrum Rotterdam (Rotterdam) |

## 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 |
|---|---|
| CCMO | NL74339.078.20 |