Positronenemissionstomographie (PET) und PET/CT zur rezidivdiagnostik bei gliomen mit hohem malignitatsgrad (III und IV) [Positron emission tomography (PET) in high-grade malignant glioma (grades III and IV)]

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Citation
IQWiG. Positronenemissionstomographie (PET) und PET/CT zur rezidivdiagnostik bei gliomen mit hohem malignitatsgrad (III und IV). [Positron emission tomography (PET) in high-grade malignant glioma (grades III and IV)] Cologne: Institut fuer Qualitaet und Wirtschaftlichkeit im Gesundheitswesen (IQWiG). IQWiG-Berichte 77. 2010

Authors' objectives
The present investigation followed 2 aims:<STRONG>Determination of the patient-relevant benefit of PET and PET/CT</STRONG>The primary aim of this report was to describe the patient-relevant benefit that doctors and patients can expect from imaging methods with PET and PET/CT in the recurrence diagnosis of highly malignant glioma. "Benefit" was understood here to mean changes that are causally attributed to the use of PET and have perceptible consequences for the patient.<STRONG>Assessment of the diagnostic and prognostic accuracy of PET and PET/CT</STRONG>If too few informative trials to determine the patient-relevant benefit (first goal) were identified, a systematic assessment of the diagnostic and prognostic accuracy of PET and PET/CT was also to be carried out (second goal). In this context it was to be examined to what extent PET and PET/CT are superior to standard diagnostic procedures without PET. In other words, does the use of PET and PET/CT improve the rate of correct diagnoses or of the correct exclusion of recurrences? Similarly, does the use of PET and PET/CT enable more reliable prognostic statements on the occurrence of a recurrence than is possible with existing standard diagnostic procedures?

Authors' conclusions
The benefit of PET and PET/CT in the detection of recurrence of malignant glioma has not been proven. Few studies exist so far on the diagnostic and prognostic accuracy of PET and PET/CT in this indication. The 12 primary studies included in this report are all very small (small precision) and, except for one, show methodological deficiencies (high risk of bias of results). In addition, the patient groups investigated, the tracers used, the threshold values and reference tests differ so considerably that no summarizing statements or comparisons of the different types of PET diagnostic procedures (devices, tracers, etc.) are possible. Further studies are urgently needed to reliably assess the diagnostic and prognostic accuracy and in particular the patient-relevant benefit or harm of PET and PET/CT in the detection of recurrence of malignant glioma. Due to the low number of cases and the very poor prognosis in many patients with malignant glioma, multi-centre studies are needed – ideally involving international cooperation – and in particular studies of high-quality methodological design, in order to obtain robust data within a reasonable period of time.

Final publication URL
https://www.iqwig.de/download/D06-01D_Abschlussbericht_PET_und_PET-CT_bei_malignen_Gliomen.pdf

Additional data URL

Indexing Status
Subject indexing assigned by CRD

MeSH
Brain Neoplasms; Gliomas; Positron-Emission Tomography

Language Published
English

Country of organisation
Germany
English summary
An English language summary is available.

English Summary
English summary available

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AccessionNumber
32011000950

Date abstract record published
20/07/2011