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1: [Hell J Nucl Med.](#) 2008 Sep-Dec;11(3):149-52. [Related Articles](#)

**Differentiation between malignant transformation and tumour recurrence by (68)Ga-bombesin and (18)F-FDG-PET, in patients with low grade gliomas.**

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Treatment of gliomas is multimodal. Magnetic resonance imaging (MRI) in the posttreatment course is of limited value due to therapy-induced changes. In low-grade gliomas (LGG) malignant transformation is of special interest. Our patients and methods were as follows: In nine consecutive patients with LGG we examined the role of bombesin labelled with gallium-68 ((68)Ga-bombesin) studied with positron emission tomography (PET), in addition to fluoro-18-fluorodeoxyglucose ((18)F-FDG) in the differential diagnosis of tumour recurrence versus malignant transformation. We used (68)Ga-bombesin combined with (18)F-FDG-PET in these patients with suspicious new contrast enhancement at the original tumour site or resection cavity in MRI. Eight patients were operated. In one patient, tumour recurrence was most likely as shown by the PET findings and chemotherapy was administered. Our results have shown that in this last mentioned patient after the follow-up period, MRI contrast enhancement was definitively regressive. In the operated patients the tumour was graded as glioblastoma multiforme, gliosarcoma and WHO grade III tumour. In two patients histological grading confirmed the PET findings without malignant transformation. In all of the 9 patients the combination of (68)Ga-bombesin and (18)F-FDG-PET predicted correctly malignant transformation or recurrence of the initial tumour grade which shows that (68)Ga-bombesin-PET can provide additional important information to detect a malignant transformation. In conclusion it is crucial for the patient to differentiate the nature of the new lesion in order to endorse an aggressive or non-aggressive treatment.

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