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## **Important information on Gliolan (5-aminolevulinic acid, 5-ALA): What to do in case of delayed surgery and information on fluorescence in non high-grade glioma.**

Dear healthcare professional,

medac GmbH in agreement with the European Medicines Agency (EMA) and the Medicines and Healthcare Regulatory Agency (MHRA) would like to inform you of the following:

### **Summary**

- Occasionally, delays and postponement of surgery may occur despite 5-ALA having been administered. It is basically unknown for how long useful fluorescence persists in tumour cells beyond the defined window of lucid contrast. If the surgery is delayed by more than 12 hours, surgery should be re-scheduled for the next day or later. Another dose of this medicine can be taken 2 – 4 hours before anaesthesia.  
Re-administration of 5-ALA on the same day should be avoided as no data are available on the safety of a repeated dose of 5-ALA or the specificity of fluorescence with repeat same day administration.
- Neurosurgeons are reminded that on the one hand fluorescence can be encountered in metastasis, inflammation, CNS infections (fungal or bacterial abscess), lymphoma, reactive changes or necrotic tissue, which does not indicate the presence of glioma cells. On the other hand, non-fluorescing tissue in the surgical field does not rule out the presence of tumour in the low density infiltration zone of patients with glioma.

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Registergericht:  
Pinneberg HRB 12042 PI

### **Background information**

Gliolan (5-ALA) is indicated in adults for visualisation of malignant tissue during surgery for malignant glioma (WHO grade III and IV). 5-ALA is a prodrug that is metabolised intracellularly to form the fluorescent molecule PPIX. As described in

the SmPC, the maximum PPIX plasma level is reached four hours after oral administration of 20 mg/kg body weight 5-ALA HCl. PPIX plasma levels rapidly decline during the subsequent 20 hours and are not detectable anymore 48 hours after administration. At the recommended oral dose of 20 mg/kg body weight, tumour to normal brain fluorescence ratios are usually high and offer lucid contrast for visual perception of tumour tissue under violet-blue light for at least 9 hours. In the clinical setting, delays can occur that prevent the patient entering the operating room and the brain may be exposed for tissue identification. This may lead to uncertainty whether the surgery can be performed within the window of lucid contrast described above. Due to this uncertainty, surgery should be completely rescheduled for the next day or later in case surgery is postponed for 12 hours or more, in which case another dose of 5-ALA can be administered 2-4 hours before anaesthesia. Re-administration of 5-ALA on the same day should not be considered as no information is available on the safety of early repeat dosing or on the specificity of fluorescence.

Please note that Gliolan should not be used as a tool for establishing the diagnosis of high-grade glioma, but is used as an aid to perform maximum safe resection. Some cases of fluorescence in non high-grade glioma cells have been reported in literature. Differential diagnosis, showing fluorescence when surgery for a suspected high-grade glioma was performed, included: inflammation, fungal or bacterial infection/abscess, necrotic tissue, multiple sclerosis, and neurodegenerative demyelinating disease (La Rocca et al., 2020\*).

The SmPC will be updated in section 4.2 (posology) in accordance with the current patient information leaflet:

*If the surgery is delayed by more than 12 hours, surgery should be re-scheduled for the next day or later. Another dose of this medicine can be taken 2 – 4 hours before anaesthesia.*

The following will be added to section 4.4 (warnings, precautions) of the SmPC:  
*False negative and false positive results may occur with the use of 5-ALA for intraoperative visualisation of malignant glioma. Non-fluorescing tissue in the surgical field does not rule out the presence of tumour in patients with glioma. On the other hand, fluorescence may be seen in areas of abnormal brain tissue (such as reactive astrocytes, atypical cells), necrotic tissue, inflammation, infections (such as fungal or bacterial infections and abscesses), CNS lymphoma or metastases from other tumour types.*

The benefit-risk ratio of Gliolan remains positive.

The obligation of neurosurgeons to attend a training course prior to the use of Gliolan remains unchanged.

### **Call for reporting**

Please report any suspected adverse reactions associated with the use of Gliolan (5-aminolevulinic acid) to:

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Email: [drugsafety@medac.de](mailto:drugsafety@medac.de)  
[www.medac.de](http://www.medac.de)  
Phone: 0049 04103 8006 -777  
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Healthcare professionals are asked to report any suspected adverse reactions to the Yellow Card Scheme electronically. Report via the website <https://www.gov.uk/yellowcard>, the free Yellow Card app available from the [Apple App Store](#) or [Google Play Store](#), and some clinical IT systems (EMIS, SystemOne, Vision, MiDatabank) for healthcare professionals. Suspected side effects can also be reported by calling 0800 731 6789 for free.

Yours sincerely



Dr. med. Barbara Jogereit  
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Annexes (if applicable)

\* La Rocca G, Sabatino G, Menna G, Altieri R, Ius T, Marchese E, et al. 5-Aminolevulinic Acid False Positives in Cerebral Neuro-Oncology: Not All That Is Fluorescent Is Tumor. A Case-Based Update and Literature Review. World Neurosurg. 2020;137:187-193. PMID: 32058110