UNIT FARMASI KLINIKAL DAN MAKLUMAT DRUG
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Light Up A Tumour!

Glioma is a primary brain tumors originate in the brain and mainly develop from glial cells. Glial cells are important in developing the structural backbone of the brain and support the function of the neurons (nerve cells), and play great roles for thought, sensation, muscle control, and coordination [1]. These tumors are very different from secondary (or metastatic) brain tumors, which originally developed elsewhere in the body and spread (metastasized) to the brain [1].

There are **4 different "grades"** of gliomas [1-3].

a) Low-grade gliomas → grade I and grade II tumors.
b) High-grade gliomas → grade III (anaplastic astrocytomas, anaplastic oligodendrogliomas, anaplastic ependymoma) and grade IV tumors (glioblastomas).

Removal as much of the tumor by surgery is the initial treatment of high-grade glioma. Other treatments involved are radiation, chemotherapy and electric fields [1].

However, the battle to find tumor in brain by neurosurgeons used to be **CHALLENGING.**

Gliolan (5-aminolevulinc Acid or 5-ALA), is a dye that accumulates in high-grade gliomas (HGGs), which makes brain tumour cells **glow** red under UV light [4,5]. Hence, it can guide the surgeon when removing the tumour.

Dosage form: Powder for oral solution. Each vial contains 1.5g of 5-ALA HCl [7].

Status in Hospital USM: Non-standard with buffer

Dose: The recommended dose is 20 mg 5-ALA HCl per kilogram body weight (For age 18 years and above) [7].

How Gliolan Works

1 Add 50 mL of drinking water to each vial. Final concentration is 30mg/ml. The solution should be a clear and colourless to slightly yellowish fluid.
Drink three hours (range 2-4 hours) before anaesthesia. [7]

2 The 5-ALA accumulates in glioma and converted into a fluorescing substance. It **glows** a reddish colour under UV light during operation. [5-6]

3 The reddish portion facilitates surgeon to remove tumor without harming healthy brain tissue.
Peak fluorescence can be expected after 6 to 8 hour with fluorescence beginning to be visible after about 3 hours. [2,3]

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