

## Lomustine Therapy

### Introduction

Lomustine is a drug that crosses the blood brain barrier and enters the nervous system. This is an uncommon property that makes lomustine an important drug in the treatment of central nervous system lymphoma, a similar disease called Granulomatous MeningoEncephalomyelitis (GME), and brain tumors. The application of lomustine often makes patients function and feel better while allowing us to use less prednisone.

### Pharmacology

Lomustine is a chemotherapy drug that binds or alkylates DNA and prevents replicating cells from surviving. The drug is metabolized by the liver. Lomustine will cause a reduction in the white blood cells, typically about 7 days after the medication is given. We advise giving the medication with food.

### Side-effects and toxicity

Side-effects, an unwanted effect of a medication, can be observed with lomustine. Organ toxicity leading to organ failure and death are also possible with this medication. About 15% of the time lethargy is noted in our patients on this medication. About 1% of the time fever, vomiting, diarrhea and not eating are noted. These side-effects are typically seen about 7 days after the medication is administered. At this time, there is often a predictable drop in the white blood cell count that potentially puts the patient at risk for infection. Often we will treat with a broad spectrum antibiotic to try to protect the patient from these side-effects. A complete blood cell count is often recommended about 7 days after the medication is given with particular attention being paid to the neutrophil count. The drop in this population of white cells often guides us in determining the proper dose that is used for the next round of therapy. Lomustine can cause liver or bone marrow failure with multiple or cumulative dosing and for this reason a biochemistry and CBC are typically sampled prior to giving the next round of therapy. A supplement to support the liver called denamarin (mild thistle and marin) along with vitamin E may protect the liver from toxicity.

### Response rates and timing of the response

The patient typically starts to improve in about 3 to 5 days with some taking up to 2 weeks to show a response. About 80% of the patients respond to therapy when lymphoma or GME is suspected with lower response